

**The Arctic.** To the ancient Greeks, the Arctic was a cosmological situation rather than a place. Their word *Artici* designated those earthly regions that lay beneath the stars in the constellation *arktos* (“bear,” hence “Arctic” from ἀρκτικός, or “near the bear”). It meant a zone of stars in the night sky that, unlike others, moved only in tight circles around a seemingly fixed point—bodies that were “ever-visible,” wrote Euclid. Stars within this Arctic Circle (at least when seen from mainland Greece) did not migrate across the horizon over the course of weeks and months, as did other constellations. Thus was the idea inaugurated of a zone on the globe where the “permanent” stars were directly overhead and where, as Gemnius of Rhodes wrote in the first century BC, it was dark for half of the year. Ptolemy (#119) fixed this Arctic Circle, an imaginary line, at around sixty-three degrees north of the equator.

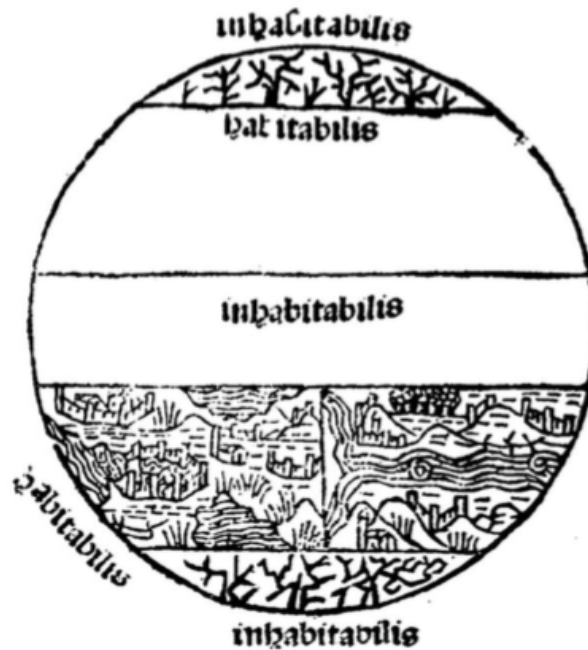
Such a circle, however, was from its inception problematic: it was in essence an arbitrary cosmological value (the celestial Arctic varied depending on where on the surface of the earth you were observing it). This was an issue noticed early on (even today, the Arctic Circle is not a line but a constantly shifting zone, which is based on celestial movement). The geometer Posidonius (d. 51 BC, #114), for example, identified the Arctic as a relative quantity. He was quoted by Strabo (#115) as asking, “How could one determine the limits of the temperate zones, which are non-variable, by means of the ‘arctic circles,’ which are neither visible among all men nor the same everywhere?” This mismatch with universal determination (at least in spatial terms) became woven into the Arctic idea at its roots, affecting its alleged description. Posidonius spoke mockingly of Pytheas of Massilia, who very possibly sailed to Iceland in the fourth century BC. Pytheas’ lost book *On the Ocean* described an encounter with a “sea lung” (*pleumon thalattios*) in northern waters, where “the earth and the sea and everything else are suspended.” He called the region “Thule.” Herodotus had spoken only of a vague *eremos aletheos*—a land of desolation, “where no nation of man lives.” Neither water, nor solid, nor air (but somehow all three), the region’s very being did not fit into antique taxonomies of matter.

Thus, in the Greek imagination, the Arctic was not just a designation of empty earth, but a place where the elements blurred. It was, as Aristotle put it, one of the ζώνες [zones or bands] literally outside the realm of habitation. In 16<sup>th</sup> century translations of Johannes de Sacrobosco’s *Sphaera mundi* [On the Sphere of the World]; written ca. 1230, the extreme north and south of the earth were illustrated as cracked striations. These were contrasted with bands of towns and cities in the more “temperate” zones, marked off by the chords of a circle—with Arctic realms located at bottom.

It had to be there: an ocean at the top of the world. The ancient Greeks drew it on their maps, and for centuries, the rest of Europe did too. But, beginning in the 1500s, countless men died trying to find a clear northern ocean, hoping for a maritime shortcut across the Arctic that would open up new trade routes to luxuries of Asia. The idea of a northern ocean passage dates back at least to the time of Alexander the Great (320 B.C.) and the ancient Greeks believed that Earth had four habitable zones



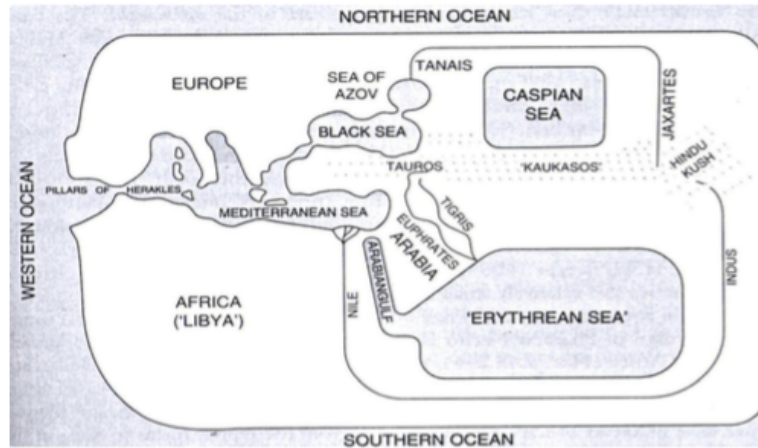
balanced by two uninhabitable frigid zones—often thought to be water—at the top and bottom of the globe.



*Fol. 5v from Johannes de Sacrobosco, Sphaera mundi, 1490*

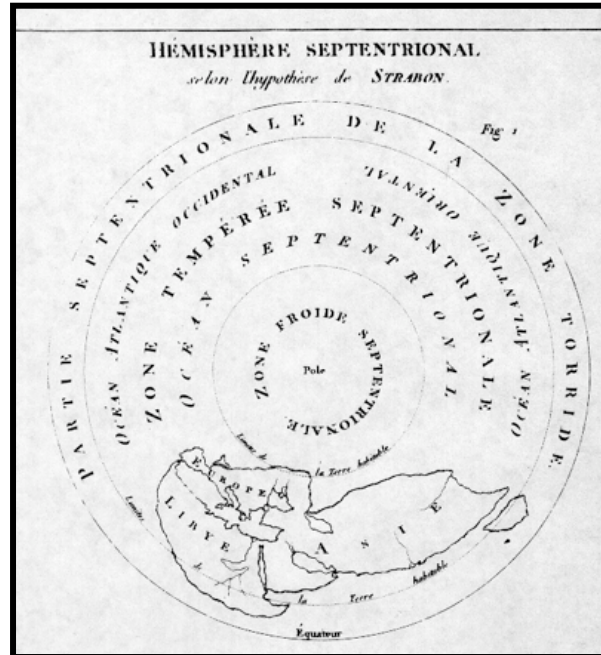
Centuries ago when people tried to map the Arctic, they just wanted to know what was up there. And, if they didn't know, they pretty much just invented it. Such was the case with the first attempts. The mystical island of *Thule* was the farthest land known in the northern region. But it wasn't until the early 16<sup>th</sup> century, after the voyages of the Portuguese and Columbus, that the idea of a Northwest or Northeast Passage really took hold in the popular imagination of Europeans and thus the impetus to explore and map the northern ocean. The Portuguese had sailed east all the way around Africa and Columbus had sailed west looking for a sea route to the luxuries of the East. Instead, the Spanish found a continent blocking the way. For the Europeans a Northwest or Northeast Passage would be a way around this newly discovered continent and a way to avoid the long trip around Africa. After the Spanish and Portuguese took control of the trade routes in the south, along the coasts of Africa and South America, it once again becomes a very popular idea as a way for the Dutch, the French and the English to get access to the East and the riches they believed to be there. Maps from this period are filled with the wild imaginings and wishful thinking of mapmakers, from nonexistent bays and islands to sea monsters.

## *The Evolution of the Arctic Regions on Early Maps*



*A schematic diagram of the world map at the time of Alexander the Great's campaigns. In this reconstruction the Tanaïs and Jaxartes are connected but the Jaxartes does not flow into the Caspian Sea and that sea is not connected to the Northern Ocean. (#112)*

The earliest surviving attempt to map the entire Arctic region that I know of is the one displayed on the earliest surviving terrestrial globe is the *Behaim* globe of 1492 (#258). The earliest known printed map that is dedicated to the Arctic is the *Septentrionalium Terrarum* by Gerardus Mercator (#407), which was first published posthumously by his son Rumold in the *Atlantis Pars Altera* (Duisburg, 1595) and which is filled with magnetic stones, strange whirlpools, and other colorful guesses. The map's creator, the Flemish cartographer Gerardus Mercator, is best known for the "Mercator projection," the now-famed method of taking the curved lines of the Earth and transforming them into straight ones that can be used on a flat map. The Mercator projection was invented for sailors, who, thanks to its design, could use it to plot a straight-line course from their point of origin to their destination. Earlier, in 1569, Mercator came out with a map of the world based on this principal, which stretched from East to West and promised, in his words, "no trace... of any of those errors which must necessarily be encountered on the ordinary charts of shipmasters."

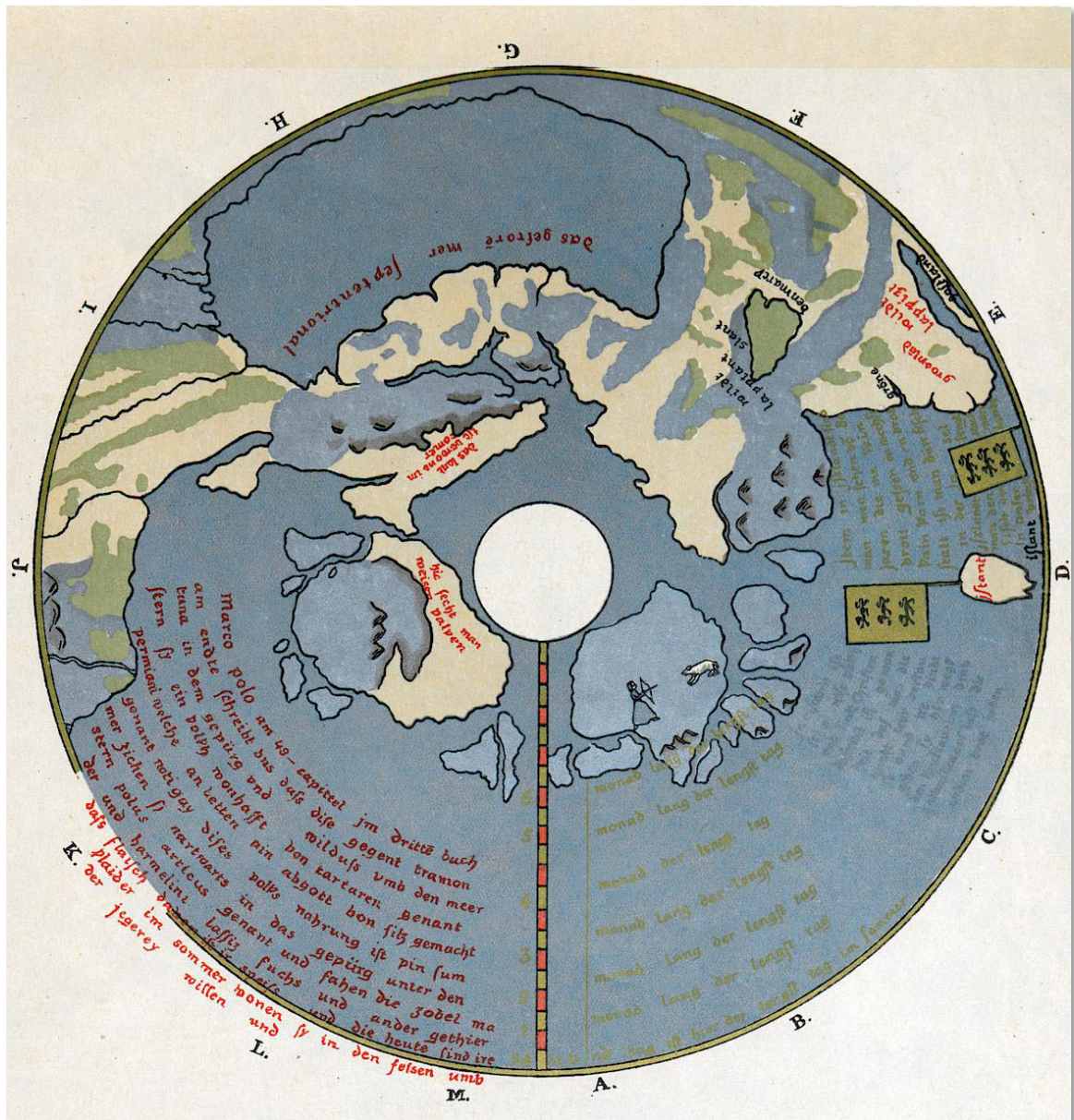


*Drawing based upon the ancient Greek Strabo's writings, 18 A.D. (#115)*

In order to make his map useful for navigation, though, Mercator had to sacrifice accuracy in other areas—specifically, he had to stretch out the top and bottom parts of his map, making the lands and seas in the far North and South appear disproportionately larger than those nearer the equator. (This is also why so many people think Africa is the same size as Greenland, when it is really about 14 times bigger—the Mercator projection is still very common in schools.)

Under the terms of this Mercator math, the North Pole would appear so large as to be almost infinite. So instead of including it in the overall projection, Mercator decided to set a small, top-down, bird's eye view of the Arctic in the bottom left corner of his world map (*Sheet 13*). One will notice the similarities with the model used by Behaim in his 1492 globe. Behaim's polar model was obviously based upon a previous existing model, possibly the *Inventio Fortunata* [translation: "Fortunate Discoveries"] which was a 14<sup>th</sup> century travelogue written by an unknown source. Geographical historians consider this to be the first true map of the Arctic. Over the subsequent decades, as new information came to light, Mercator and his protégés enlarged and updated this original map but those original bones remained in place.





The North Pole on the facsimile Behaim globe goes by Ravenstein

By the 1500s, not very many people had ventured up to the Arctic—no explorer would actually set foot on the Pole itself until the 20<sup>th</sup> century, in 1909. This did not stop Mercator, who explored some questionable sources to determine out what he should include. Like Behaim, the most influential, again may have been the *Inventio Fortunata*; in Mercator's words, it traced the travels of "an English minor friar of Oxford" who traveled to Norway and then "pushed on further by magical arts." This mysterious book gave Mercator the centerpiece of his map: a massive rock located exactly at the pole, which he labels *Rupus Nigra et Altissima*, ["Black, Very High Cliff"].

The presence of this formation was widely accepted at the time. Most people thought it was magnetic, which provided an easy explanation for why compasses



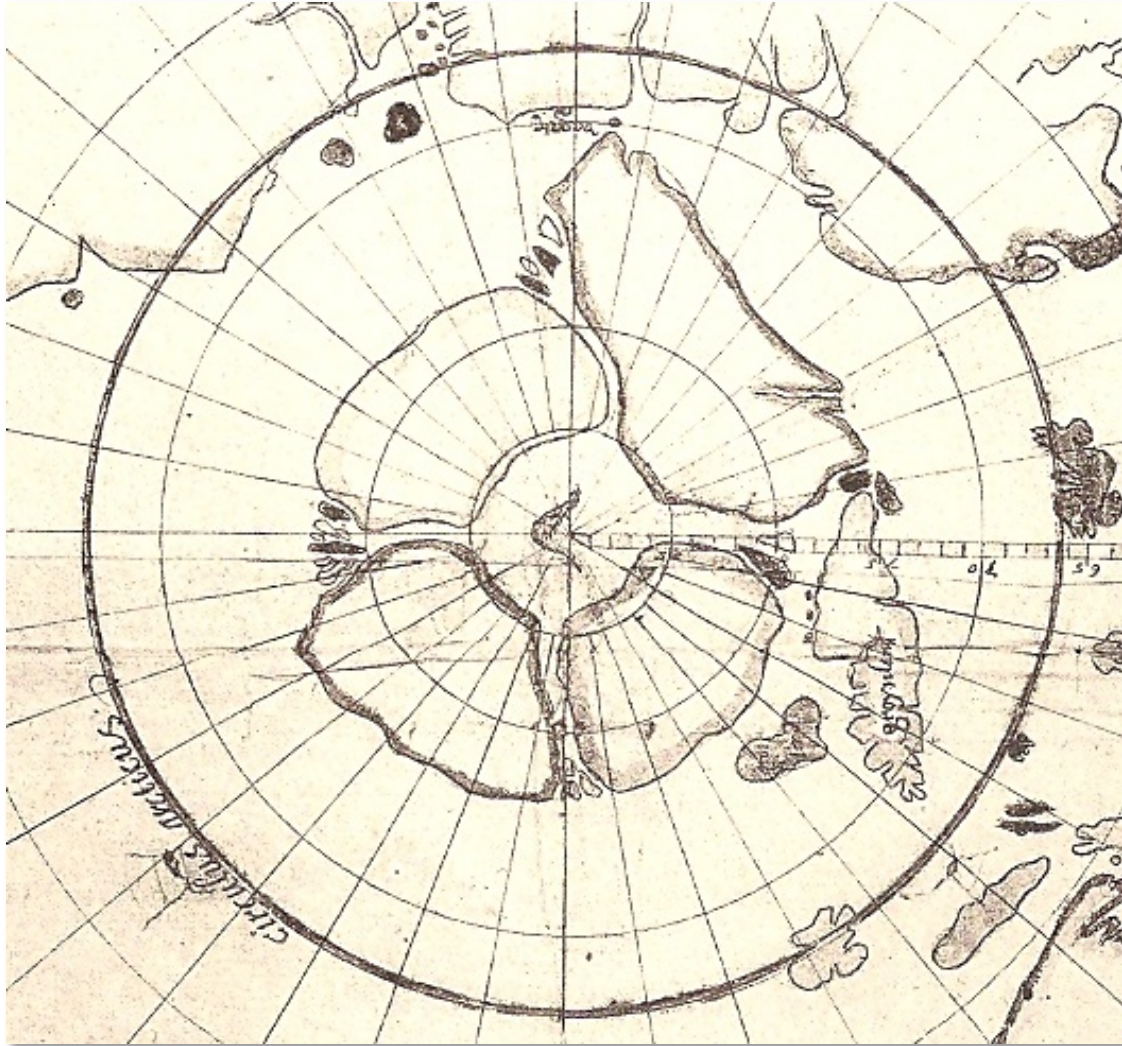
point north. But Mercator was not quite convinced by this argument, and included a different rock, which he labels “Magnetic Pole,” in the top left corner of the map, just north of the *Strait of Anian*.



*North Pole on the author's copy of the Behaim globe*

Like Behaim, and other cartographers of this period, Mercator draws the Arctic in four large chunks separated by channels of flowing water, which meet in the middle in a giant whirlpool. He may also have gotten this idea from two 16<sup>th</sup> century explorers, Martin Frobisher and James Davis, who each made it as far as what is now Northern Canada. Both documented their experiences with vicious currents, which, they wrote, pulled giant icebergs along like they were nothing. “Without cease, it is carried northward, there being absorbed into the bowels of the Earth,” Mercator wrote on his original map.

Each piece of the Arctic landmass also has particular qualities. According to Mercator's labels, the one in the lower right is supposedly home to “pygmies, whose length is four feet”—likely another reference to the *Inventio Fortunata*, which described groups of small-statured people living in the polar regions. (It's possible that the author of the *Inventio* was referring to the indigenous inhabitants of Lapland.) The landmass on the bottom left is apparently “the best and most salubrious” of all the chunks, although no evidence is given to support this—or to explain why the pygmies wouldn't want to live there, instead.



*The North Pole region on the 1582 map by Dr. John Dee (#418)*

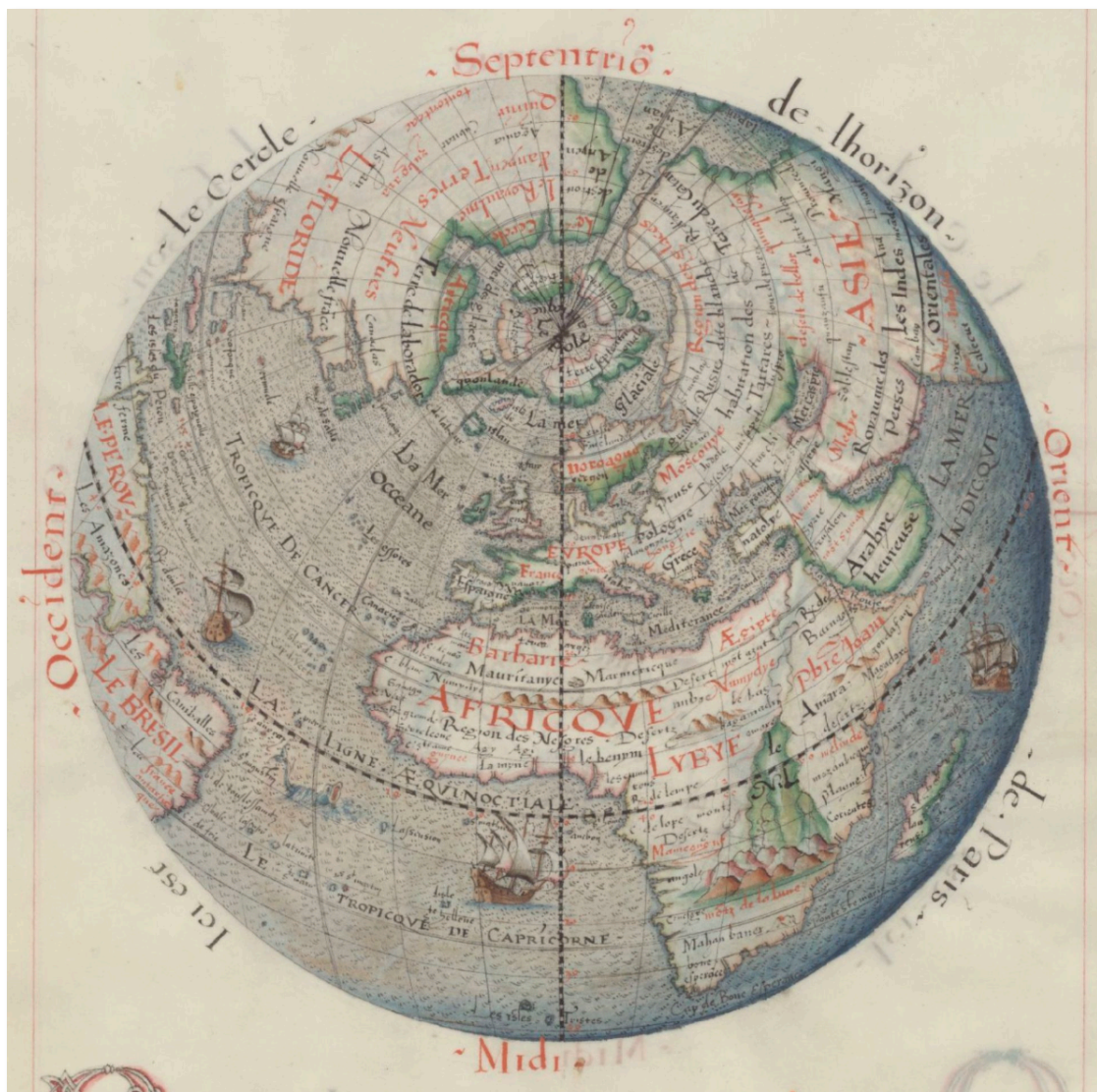


*The Evolution of the Arctic Regions on Early Maps*



*The North Pole on Jacques de Vaulx's 1583 map*

## The Evolution of the Arctic Regions on Early Maps



The North Pole on Jacques de Vaulx's 1583 map



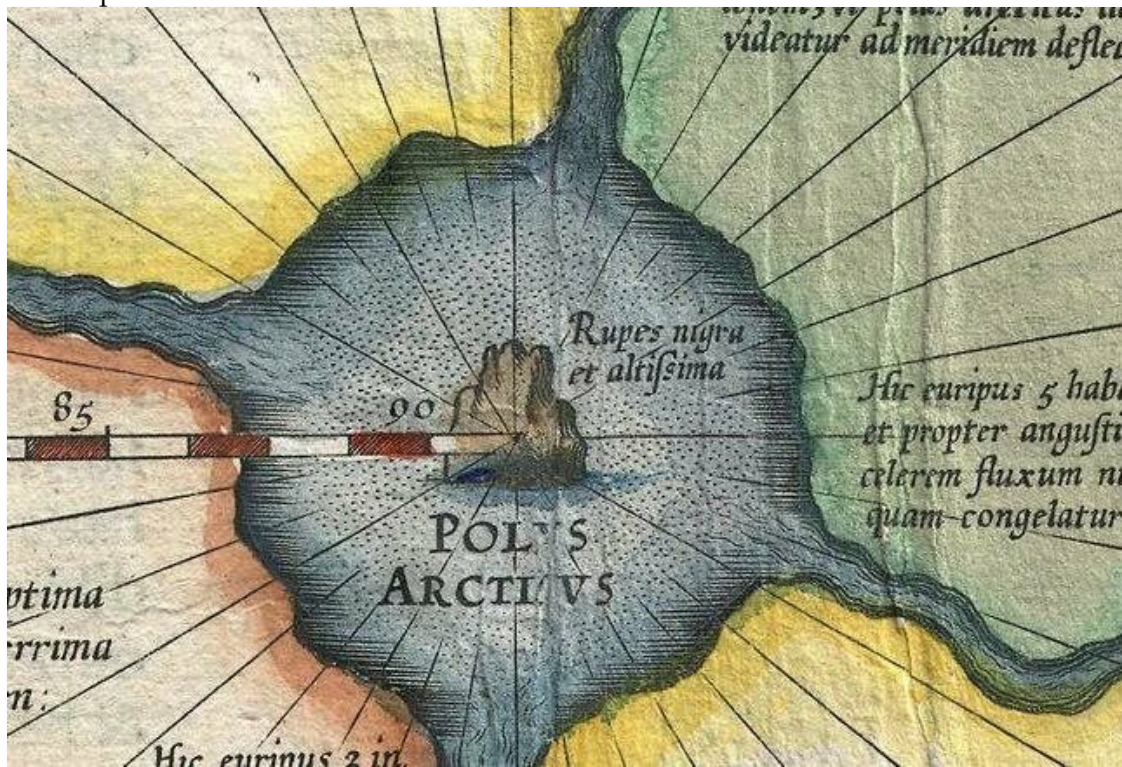


*Septentrionalium terrarum descriptio* by Gerardus Mercator, 1595 (#407)

Mercator was famous for his meticulous research and accuracy, and thus it is quite a surprise to see for the first time Mercator's map of the northern polar regions, *Septentrionalium terrarum descriptio* (1595): the map shows a North Pole that is very unfamiliar to modern eyes. At the center of the map, and right at the Pole, stands a huge black mountain; this mountain was made of lodestone, and was the source of the earth's magnetic field. The central mountain is surrounded by open water, and then further out by four large islands that form a ring around the Pole. The largest of these islands perhaps 700 by 1,100 miles, and they all have high mountains along their southern rims. These islands are separated by four large inward-flowing rivers, which are aligned as if to the four points of the compass; though of course there is no north, east, or west at the North Pole: every direction from this center is south. Mercator's notes inform us that the waters of the oceans are carried northward to the Pole through these rivers with great force, such that no wind could make a ship sail against the current. The waters then disappear into an enormous whirlpool beneath the mountain at the Pole flowing beneath a large and tall black rock, 33 leagues



around, that is located there, and are absorbed into the bowels of the earth. The *Septentrionalium terrarum descriptio* was printed (posthumously) in 1595, and is very similar to an inset map of the northern polar region (lower left) that Mercator made earlier on his world map of 1569, *Nova et aucta orbis terrae descriptio ad usum navigantium emendate accommodata*, [Adapted to the new description of the world and is increasingly correct by the use of navigation], commonly referred to as *Ad usum navigantium* [For use in navigation] (see #406). The 1595 map has been widely reproduced. These northern islands, however, did not appear on Mercator's world map of 1538. Mercator held that there were two additional magnetic poles north of the strait between Asia and the New World, in order to account for the deviation of the compass.



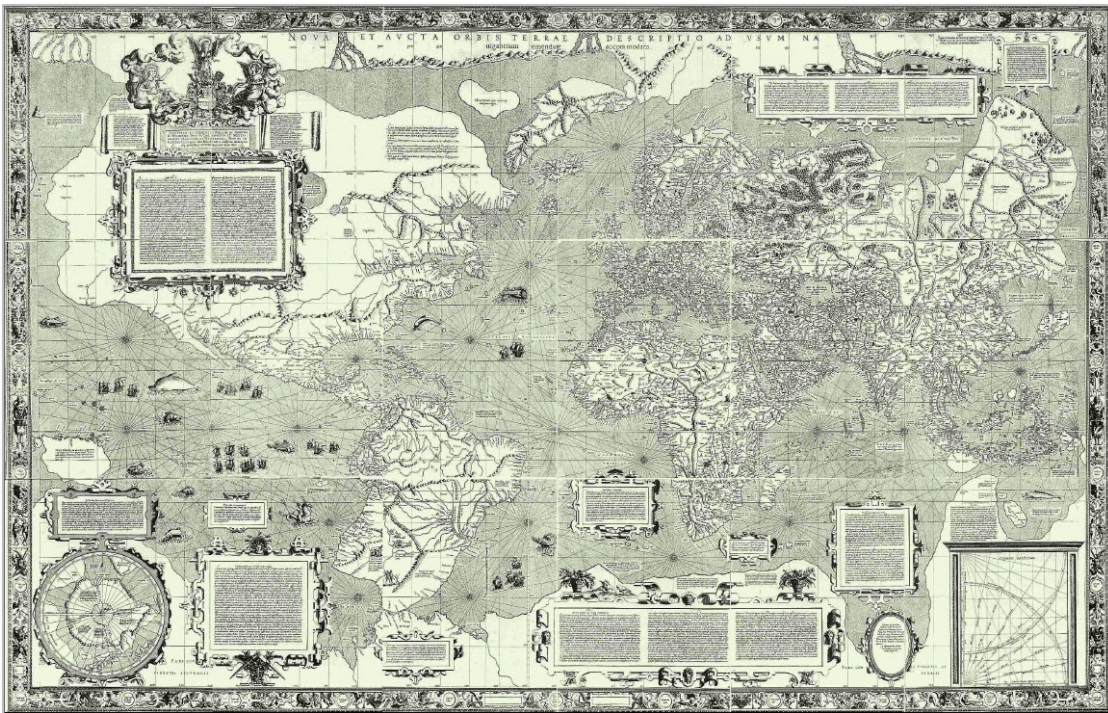
The first edition, first state of Mercator's map of the Arctic regions, represents the first separately published map of these regions. Gerard Mercator was the first cartographer to create a polar projection of the earth. As mentioned, this map, the first separate map devoted to the Arctic regions, was drawn based on the earlier 1569 inset on Mercator's world map. The map is extended to 60 degrees, to incorporate the recent explorations in search of the Northwest Passages by Frobisher and Davis. Between the Arctic coasts of America (curiously labeled as *California*) and Asia are two separate magnetic poles, indicating Mercator's knowledge of magnetic deviation and also the uncertainty of representing a true north. An account of this myth in Mercator's own hand still exists. *California* is identified as Spanish Territory and *El Streto de Anian* [Alaska's Bering Strait] is clearly shown.

Gerard Mercator's classic map of the Arctic is in hemispherical form framed by four medallions and a handsome floral border. Three of the medallions contain inset maps of the Faeroe Isles, the Shetland Isles, and the mythical island of *Frisland*. The first edition of the map is extremely rare, especially in the true first edition. The first edition can be distinguished from later editions by its inclusion of a definitive



coastline in the lower right of the four islands surrounding the pole (*Pygmei*). Later editions omit part of the coastline.

As mentioned, in 1569 Gerard Mercator published an 18-sheet world map using the projection that, to this day, bears his name. The *Mercator Projection* increasingly spreads out the vertical space required to portray each degree as the latitude increases towards each pole. In fact, an infinite spread would be required to reach the actual North or South Pole in this projection. For this reason, world maps drawn on a Mercator projection stop well short of 90°. Mercator, however, wanted to depict the Arctic regions on his map, so he came up with the idea of including a small inset map, on a polar projection, which he drew in the lower left-hand corner of his large wall map. The polar map shown here, published in the first edition of Mercator's famous *Atlas*, is basically a copy of the polar inset from his 1569 world map, but with some added features.



*Mercator's 18-sheet 1569 world map using his now famous projection.*

*Note that the North Pole is stretched along the top of the map due to the limitations of the projection employed. His interpretation of the North Pole is provided with an insert on the lower left corner, see this detail below. (#406)*





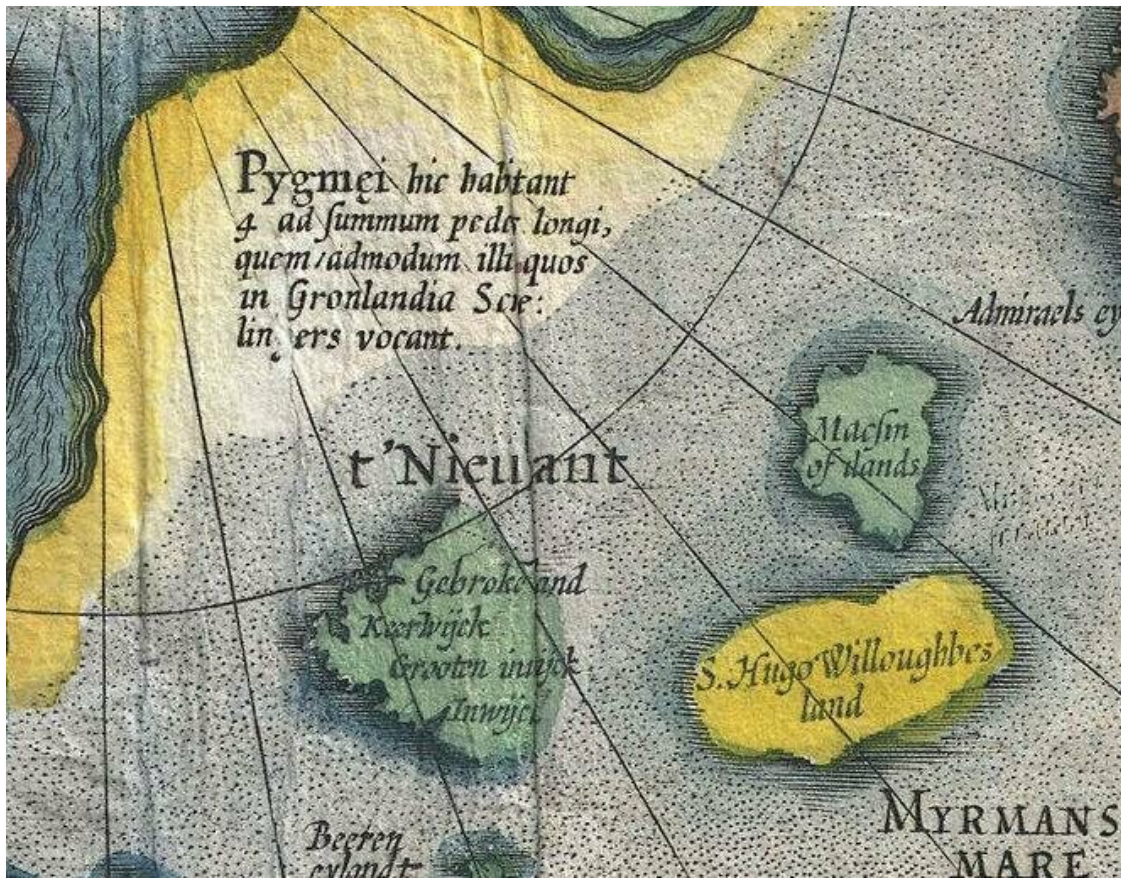


The inscription on sheet 13, within the frame, above the map of the North Pole, explains the necessity of a separate map for the north-polar region, and gives the source of the author's information concerning the arctic:

*Since our map could not be extended to the pole, as the degrees of latitude run out to infinity, and since we have some description of the north, by no means to be neglected, we have thought it necessary to give here the extreme part of our mapping, and to join what is left as far as the pole. We have taken a figure which best suited that part of the world, and which would represent the position and appearance of the land as if it were on a globe. As for the mapping, we have taken it from the "Itinerium" of Jacobus Cnoyen of the Hague, who makes some citations from the Gesta of Arthur of Britain; however, the greater and the most important part he learned from a certain priest at the court of the king of Norway in 1364. He was descended in the fifth generation from those whom Arthur had sent to inhabit these islands, and he related that in the year 1360 a certain Minorite, an Englishman from Oxford, a mathematician, went to those islands; and leaving them, advanced still farther by magic arts and mapped out all and measured them by an astrolabe in practically the subjoined figure, as we have learned from Jacobus. The four canals there pictured he said flow with such current to the inner whirlpool, that if vessels once enter they cannot be driven back by any wind; and he said that nowhere was there wind strong enough for transporting grain. A very similar description is in Gerald de Barry's book on the marvels of Hibernia, for he writes as follows, "Not far from the islands [Hebrides, Iceland, etc.] on the north is a wonderful whirlpool, to which from distant parts all the waves of the sea run and flow as if from a conduit. These, pouring there into the secret penetralia of Nature, are sucked down as if into an abyss. If it happens that a ship passes through this, it is drawn and hurried on by such violence of the waves that the power of the maelstrom sucks it down at once beyond recall."*

In 1595 - never mind 1569 - no explorer had been anywhere near the North Pole, and today we view the ring of islands shown surrounding the North Pole on this map as pure fantasy or invention. Yet Mercator based his polar depiction on the most credible information available to him at the time. One of his sources was a work named the *Itinerarium* by Jacob Cnoyen, a Flemish traveler. No copy of this book is known to have survived, but Mercator quoted from this book in letters he wrote to the British polymath John Dee, in which he explained the source of his ideas regarding the geography of the far north. In turn, Cnoyen gave as his sources the *Res gestae Arturi britanni* (now lost), and a book written by an English Minorite, a mathematician from Oxford, who had traveled in the far north in 1360 and recorded what he saw; this work was called the *Inventio fortunata*, which also, (ironically, in light of its title) is lost.

The suggestion that there must be a large mountain of lodestone at the North Pole to account for the earth's magnetism goes back to at least the 13<sup>th</sup> century, not long after the invention of the compass, but what was the source of the four islands and the inward-flowing rivers, of the mountains and the Pygmies. The cartographer Johannes Ruysch (#313) cites the same sources as Mercator, and Fridtjof Nansen (*In Northern Mists: Arctic Exploration in Early Times*) argues convincingly that Martin Behaim (#258) was also working from the *Inventio fortunata*. Mercator and his contemporaries believed the author of the *Inventio fortunata*, the English Minorite, to be Nicholas de Linna (Nicholas of King's Lynn); others have argued against this identification.



An idea, expressed in one of the text annotations on the Mercator polar map map is that "pygmies," at most four feet tall, live on one of these four arctic islands.

As mentioned above, in the four corners of the map are the title and three insets showing islands of the North Atlantic: the Shetlands, the Faroes, and *Frisland*. This latter, *Frisland*, is one of the "phantom" islands that have appeared over the centuries in maps of the Atlantic. On the main map *Frisland* can be seen in the ocean south of Iceland and Greenland. Mercator copied *Frisland* from an Italian map of the mid 16<sup>th</sup> century, but he was unknowingly perpetuating an earlier cartographer's error since no island actually exists in that location (see the separate monograph on *Frisland* on this website).

More remarkable than this map itself is the fact that many other contemporary maps, maps by the most respected cartographers of the time, show a very similar configuration around the North Pole. Besides Martin Behaim (#258), who died before Mercator was born, made a famous globe in 1492, there is a world map by Johannes Ruysch, the *Universalior cogniti orbis tabula* (#313), published in an edition of Ptolemy's *Geographia* in Rome in 1508, that shows four islands around the North Pole; two (the one north of Greenland and its opposite across the Pole) are labeled *Insula Deserta*; the one north of Europe is that of the *Hyperboreans*; and the one north of America is labeled *Aronphei*. He labels the waters within the four islands as the *Mare Sugenum*, and speaks of a violent whirlpool that sucks the incoming waters down into the earth;

in addition, his map shows a ring of small, very mountainous islands around the four islands, which numerous islands Ruysch says are uninhabited.

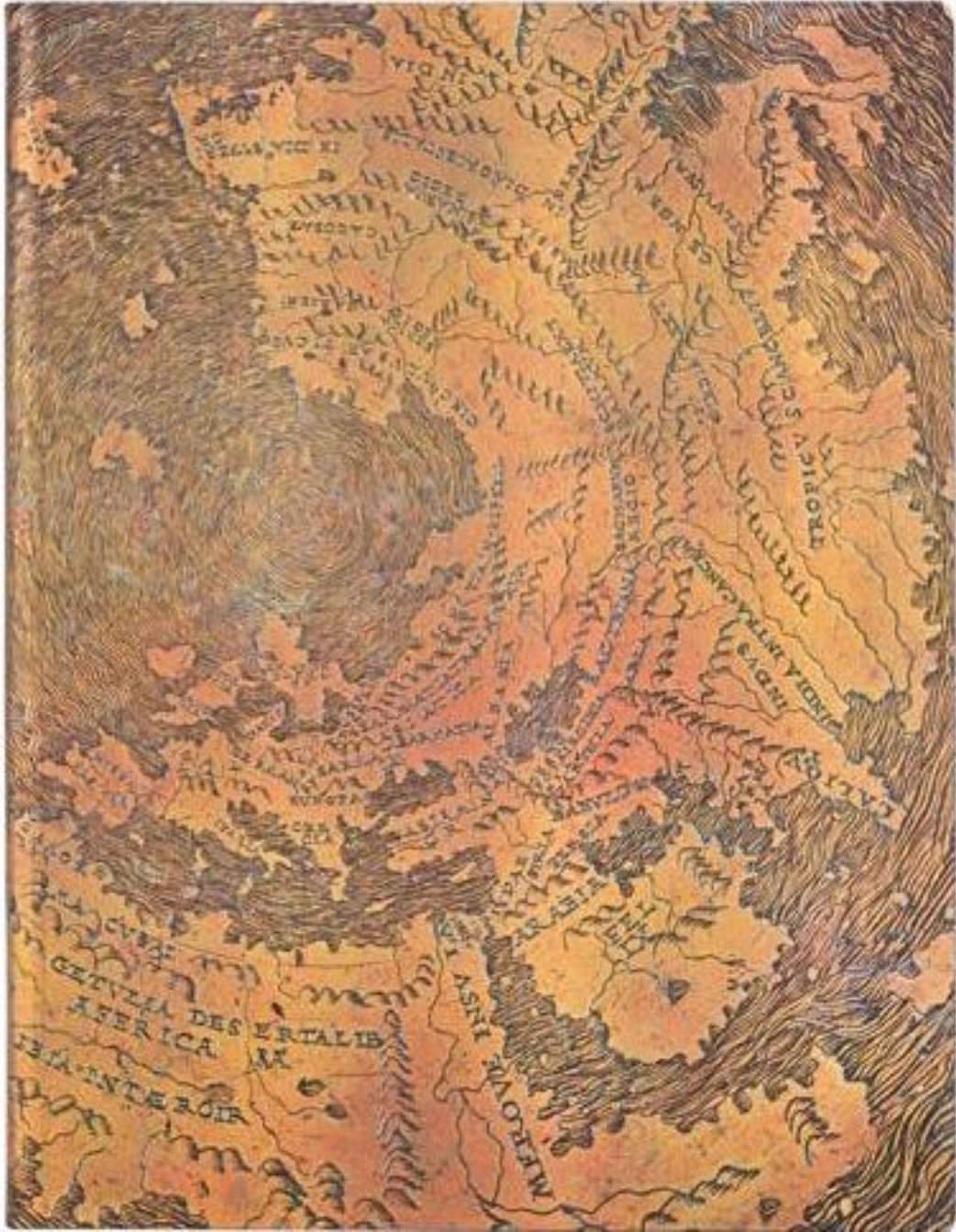


*The North Pole on Ruysch's 1508 world map. (#313)  
"H" indicates Hyperborea, "M" the magnetic Mountain*

Other maps, shown below, that show these northern islands and some of which were published BEFORE the Mercator stand alone polar map include: the Azimuthal Equidistant Projection Centered on the North and South Poles by Giovanni Vespucci, 1524; the Orontius Finaeus' *Nova et Integra Universi Orbis Descriptio* (#356), published in 1534-6, but designed about 1519 for Francis I; Abraham Ortelius' famous *Typus Orbis Terrarum* (1570) and also his *Septentrionalium regionum descriptio* (1570), which latter follows Mercator particularly closely; the anonymous world map in George Best's *True Discourse* (London, 1578); Cornelius de Jude's *Speculum orbis terrae* of 1593 (#433), as well as his maps of *Quiviriae regnum* and *Americae pars borealis* (also 1593); and Petrus Plancius' *Orbis terrarum typus de integro multis in locis emendatus* (1594), published in Jan Huygen van Linschoten's *Itinerario* (1596), as well as his influential *Nova et exacta terrarum orbis tabula geographica ac hydrographica* (Amsterdam and/or Antwerp, 1592). There are many, many other contemporary maps, literally scores, including examples from as late as the 1700s that show the same configuration of islands around the Pole.



*The Evolution of the Arctic Regions on Early Maps*



*The Arctic region on the 1507 Lenox globe (#314) displaying no polar landmass*





*A 1511 polar world map by Vesconte Maiolo [de Maggiolo] showing no polar landmass per se but a Eurasian landmass circling the North Pole (#316)*

The world map shown here is drawn with a north polar projection that provides its distinctive fan shape. Its format resembles the maps of Contarini and Ruysch (#308 and #313), which are derived from conical projections. Maggiolo has not

attempted to display the full 360 degrees of the sphere; less than 200 degrees appear, leaving East Asia and the Ocean Sea incomplete. His interpretation of longitude within this projection continues the elongated east-west dimensions for the Mediterranean, Europe, and African areas seen on earlier maps. The farther south the area, the more pronounced this effect becomes.

The single Arctic and North Atlantic landmass at the top indicates that the location of the new discoveries was still thought to be in far northeastern Asia. Maggiolo's map shows a solid Eurasian continent running from *Noruega* [Scandinavia] around the North Pole, including Asia's arctic coast, to Newfoundland-Labrador and Greenland. On the extreme northeast promontory of North America, Maggiolo place-names include *Terra de los Ingres* [Land of the English], and *Terra de Lavorador de rey de portugall*. Further south, we notice *Terra de corte reale de rey de portugall* [Land of the Corte-Real and of the King of Portugal] and *terra de pescaria* [fishing grounds]. Just westward the presence of the name *India Occidentalis* [West Indies] appears for perhaps the first time on a map.



## The Evolution of the Arctic Regions on Early Maps



Map of the Arctic Circle by Henricus Glareanus, 1513, projected from the North Pole, showing part of North and South America as two islands, some Caribbean islands, and a large island to the west of North America. Cartographic elements include lines of latitude and longitude. Again, no Arctic landmass is shown.

*The Evolution of the Arctic Regions on Early Maps*



*Facsimile globe based upon Universalis Cosmographie Descriptio Tam In Solido Quem Plano, Toss Globe Gores, 1514, by Louis Boulengier (#324). No Arctic landmass depicted.*



*Arctic regions on the facsimile Boulengier globe produced by Dr. D. W. Larson, Emeritus Professor University of Guelph, Guelph, Ontario, Canada*



*The Evolution of the Arctic Regions on Early Maps*



*The North Pole depicted on the globe gores by Leonardo da Vinci, 1514 (#327)  
This world map among da Vinci's papers in the Royal Library, Windsor, which is one of the very first maps to name the Americas, and has the correct overall configuration of the continents, including an ocean at the North Pole and a continent at the South Pole (at the centers of the left and right quartets, respectively).*

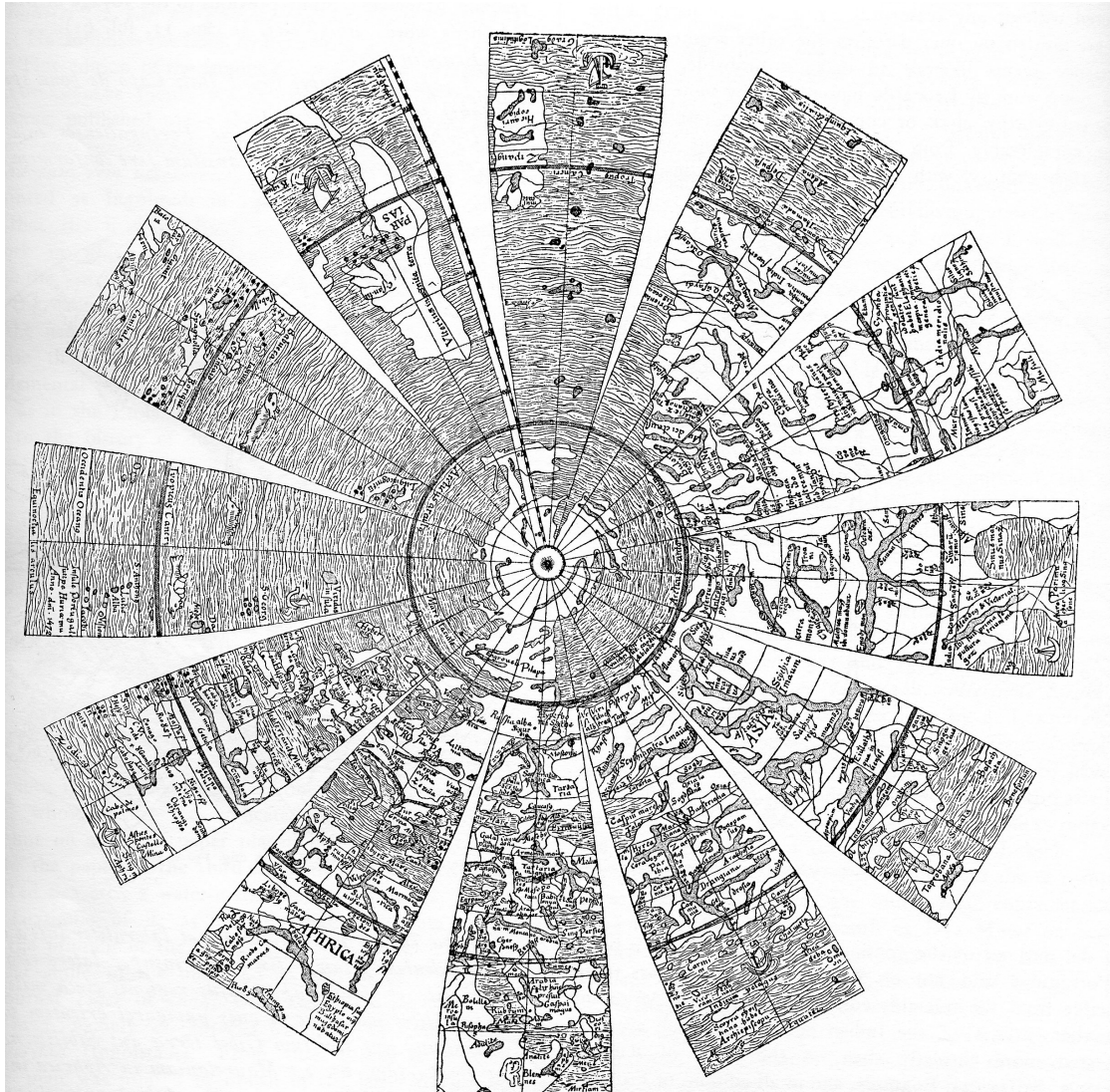


*Arctic regions on the facsimile globe produced by Dr. D. W. Larson, Emeritus Professor  
University of Guelph, Guelph, Ontario, Canada*



*Drawing of the terrestrial globe by of Johannes Schöner, 1515, a.k.a. the Weimar Globe  
Displaying separate Arctic and Antarctic landmasses at the North and South Poles  
Below is a picture of the globe gores depicting the North Pole. (#328)*





*The globe gores for the 1515 globe by Johannes Schöner  
(a facsimile from Jomard/Nordenskiöld, #328)*

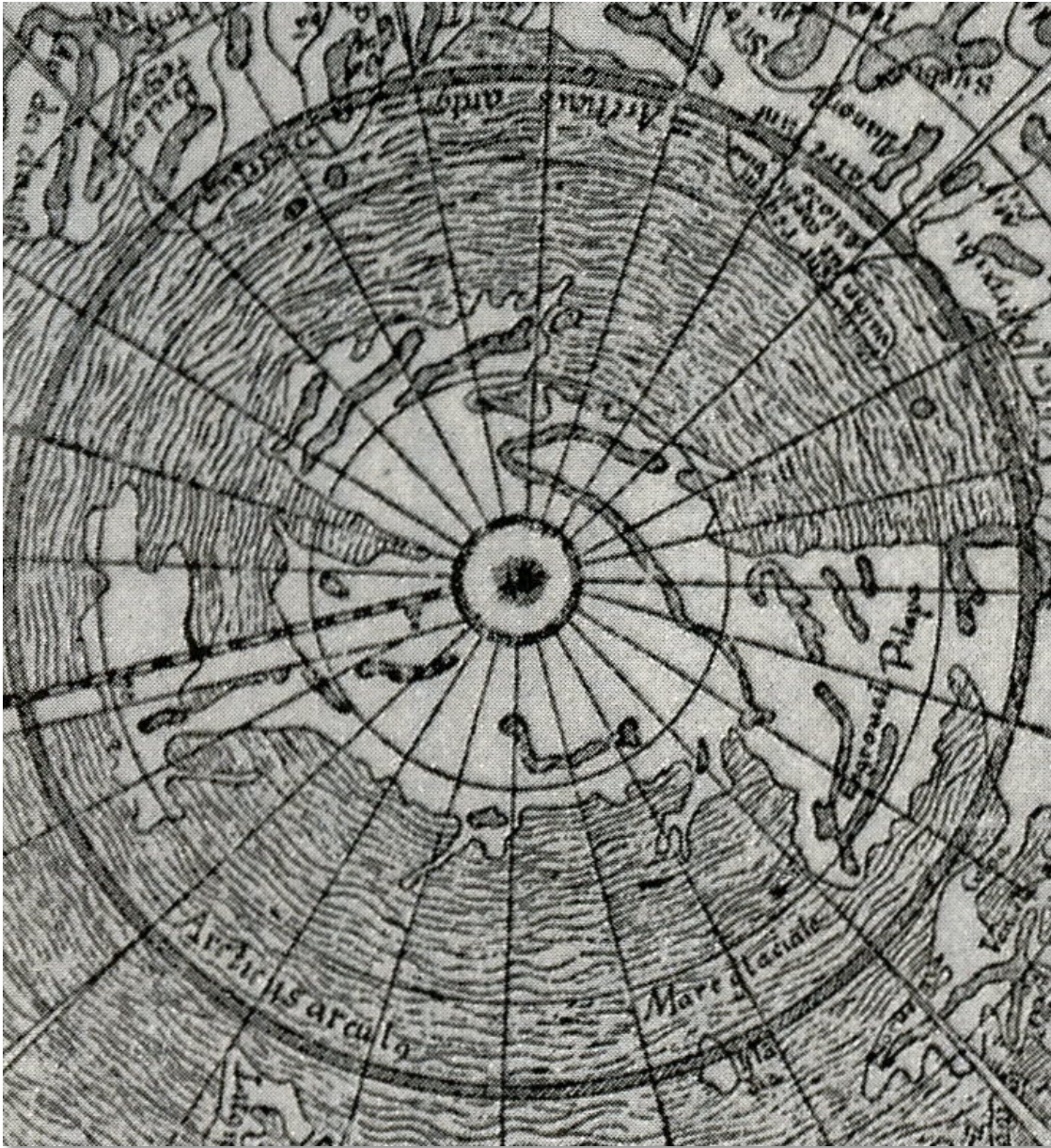
The following is James Enterline's observation of Schöner's north polar area on his printed globe of 1515. While the "B-type maps" all have the characteristic wedge-shaped "Engroneland," no other map has shown continental land right under the pole star. Schöner himself makes no special mention of it in his text, evidently accepting it as covered in Clavus' description of Engroneland: *"It stretches down from land on the north which is inaccessible or unknown on account of ice."*

This is perhaps the strongest reason of all for believing that Schöner worked from a third text (and map) of Clavus. If he had any other source for his polar land he would have been bound to mention it at this point. Instead, his text turns directly to another subject. The Vienna text, however, after making the above statement, continues: *"Nevertheless, as you may see, the pagan Karelians daily come to Greenland in a great flock, and that without doubt from the other side of the North Pole. Therefore the ocean does not wash the limit of the continent under the pole itself as all ancient authors have asserted; and therefore the noble English knight, John Mandeville, did not lie when he said that*

he had sailed from the Indian Seres to an island in Norway." The polar continent on Schöner's globe seems perfect to replace this passage in the Vienna text. If Clavus had had such a map, he would have done well to let it speak for itself and drop any mention of the pagan Karelians and the more notorious than noble John Mandeville. A possible prototype for the map may be discerned by facing it from its base in "Engroneland" and "Pilapa[land]." Above this one sees a circumpolar continent bifurcated by a deep bay opposite the North Pole. This bay has some of the characteristics of a greatly narrowed Hudson Bay, with a suggestion of James Bay at the bottom. To its right is a sector of land that is set off by another lesser inlet about 70° clockwise from the Hudson Bay analogue. This could represent a doubled-scale analogue of the wedge-shaped Quebec peninsula. Left of Hudson Bay would be Melville Peninsula jutting upward and the coastline then continuing to the left. In the upper left corner jutting out into the sea is a configuration which, at this scale, is impossible to identify with anything real. But it could be an agglomeration of the entire Arctic Archipelago into a single landmass, connected to the continent by the Boothia Peninsula. The modern scholar Dana Durand made just such an agglomeration in a *ViennaKlosterneuburg* map, and some versions of the United Nations emblem, a world polar map, contain an agglomeration of this archipelago.

These interpretations are corroborated when we realize that the left side of the polar continent does not actually proceed southward in this rendition. It merely follows a circle of constant latitude to the westward. The displacement of the land relative to the true pole has caused the map of this North American Arctic coastline to be convex rather than concave. After overcoming this disconcerting effect, we come to the interesting realization that this kind of distortion could only have arisen from data containing latitude observations, and it therefore implies European presence in the area. The two peninsulas along the left side now correspond to Martin Behaim's two peninsulas (#258), which have been identified as Adelaide Peninsula and Kent Peninsula. We may be seeing the *Inventio Fortunatae* speaking again, this time filtered through Clavus. [Enterline, James, *Erikson, Eskimos & Columbus*, pp. 252-255.]







*Polar view of the Paris Green (Quirini) globe, 1507/1515-1518 (#342.1)  
Displaying a polar landmass connected to Russia*



*The Evolution of the Arctic Regions on Early Maps*



*A drawing of the 1520 globe by Johannes Schöner (#328)*



*Arctic regions on the Nova et integra universi orbis descriptio [Paris Gilt or De Bure Globe]  
1527, (#344) Facsimile produced by Dr. D. W. Larson, Emeritus Professor  
University of Guelph, Guelph, Ontario, Canada*



*The Evolution of the Arctic Regions on Early Maps*



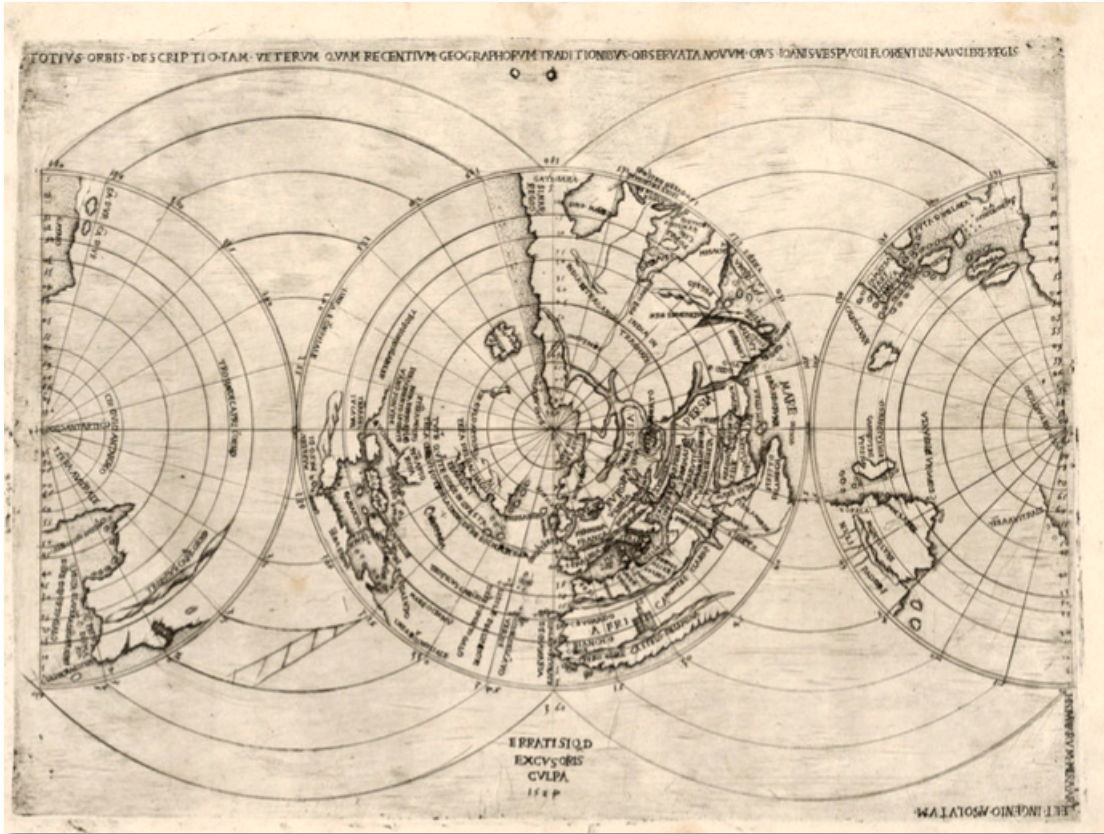
*The polar regions shown on a facsimile of the 1533 globe by Johannes Schöner (#328/#332.2)  
Note the large Arctic landmass that extends as part of Eurasia*

*The Evolution of the Arctic Regions on Early Maps*



*The Arctic region on a facsimile of the 1533 globe by Johannes Schöner  
Facsimile produced by Dr. D. W. Larson, Emeritus Professor  
University of Guelph, Guelph, Ontario, Canada*





*Azimuthal Equidistant Projection Centered on the North and South Poles by Giovanni Vespucci, 1524. The arrangement of the hemispheres in this projection is similar in concept to Eckebreht's, except that the aspect is polar, not equatorial, and the projection is equidistant, not stereographic. Because the map was produced in association with the Badajoz-Blvas Conference, its purpose was presumably to allow the visualization of the Spanish and Portuguese realms in both eastern and western hemispheres.*

*Houghton Library, Harvard University (51-2573 PF).*

It should be noted that on world maps centered on the equator, rather than the Pole, the northern islands appear as elongated strips across the top of the map, due to the distortions involved in projecting the surface of a sphere onto a two-dimensional map. Mercator's *Septentrionalium terrarum descriptio* was popular enough to inspire a number of blatant imitations, including maps by Matthis Quad (Cologne, 1600), Petrus Bertius and Jodocus Hondius Jr. (1616), and Johannes Cloppenburg (1630).

After Mercator died in 1594, explorers continued to gain new knowledge of the Arctic, and cartographers revised their view of both of the Poles. By 1636, some up-to-date maps of the region lacked the now classic "four island" configuration, along with the *Rupus Nigra* and the central whirlpool. Instead, they showed one single large piece of land, surrounded by smaller islands and, often, adorned with the ship's routes that enabled this geographical knowledge in the first place.

The cartographic influence of Mercator and the equally famous cartographer Abraham Ortelius even extended to China: there are Chinese maps that show the northern islands (e.g., *Shanghai Yudi Quantu*, [Complete Geographic Map of the Mountains and Seas], 1609. These maps are derived from the world maps of the Jesuit missionary Matteo Ricci (1552-1610), who established a mission at Zhaoqing



Prefecture (in present-day Guangdong Province) in 1583 (see #441). Mercator-influenced maps also appear in Japan: Abe Yasuyuki's *Banukoku Chikyū Yochi Zenzu* [Map of the World] 1853, shows the four northern islands configuration. Basically, though, Mercator's view of the northern regions lost favor after 1598, when the Dutchman Willem Barentsz made his famous chart of the northern polar regions showing open water there.



Part of Orontius Finaeus' *Nova, Et Integra Universi Orbis Descriptio*, 1531, 28.5 X 41 cm, double-page woodcut double-cordiform map (#356). Fine has unambiguously made the North America continent part of the eastern extremity of Asia. Four islands make up the north polar regions. The separate island of Greenland is named, and a large promontory marked Gaccalar (supposedly Labrador) extend from the North American landmass into the Atlantic.



*The Evolution of the Arctic Regions on Early Maps*



*The Bailly Globe, 1530 displaying a single small polar landmass  
Facsimile produced by Dr. D. W. Larson, Emeritus Professor  
University of Guelph, Guelph, Ontario, Canada*



## *The Evolution of the Arctic Regions on Early Maps*



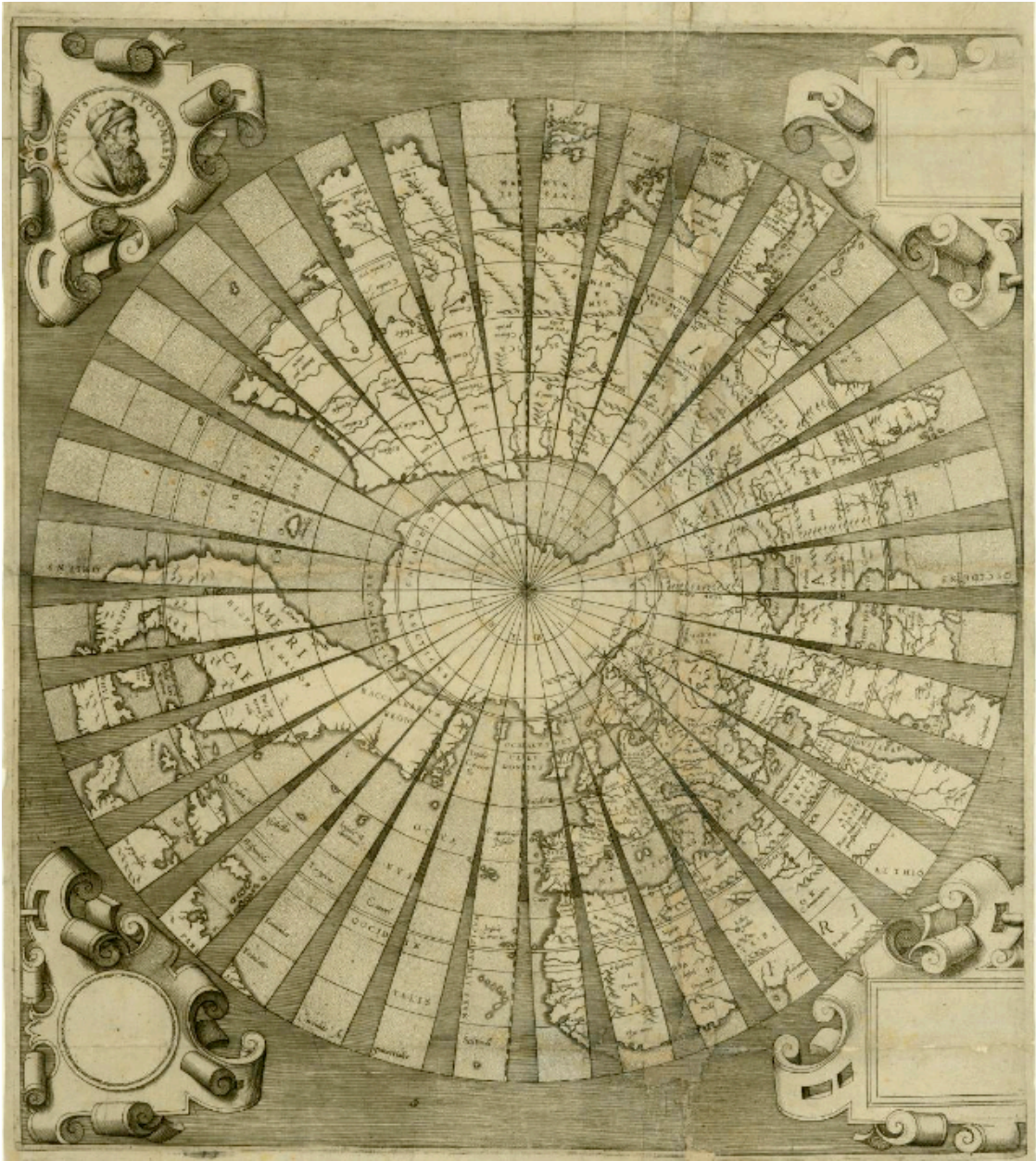
*Orontius Finaeus' Recens et Integra Orbis Descriptio, 1534/1536,  
BNF, Cartes et Plans, Rés. Ge DD 2987[63] (#356) Displaying the four island configuration  
for the North Pole.*







*A polar view of the Paris Wooden Globe/De Bois Globe, 1535 (#357)  
Displaying a polar landmass as an extension of the Eurasian/America landmass*



*The North Pole as a landmass extending from Russia on a polar projection by Antonio Floriano, 1555, an unusual adaption of Mercator's 1538 world map in the form of gores. Map of the world in two 36 gore hemispheres, This image is the left sheet of a two-sheet map and is a north polar projection including North America, Caribbean islands, and northern part of South America. Cartographic elements include lines of latitude and longitude and some topographical details. Decorative elements include a medallion portrait of Claudius Ptolemy,*



## *The Evolution of the Arctic Regions on Early Maps*



*The North Pole in the four-island configuration, Asia connected to North America and a very small Antarctica on the world map by Paolo Forlani, 1562*





*World map by Abraham Ortelius, 1570 from the Theatrum Orbis Terrarum  
Showing the North Pole region consisting of four islands*



## *The Evolution of the Arctic Regions on Early Maps*

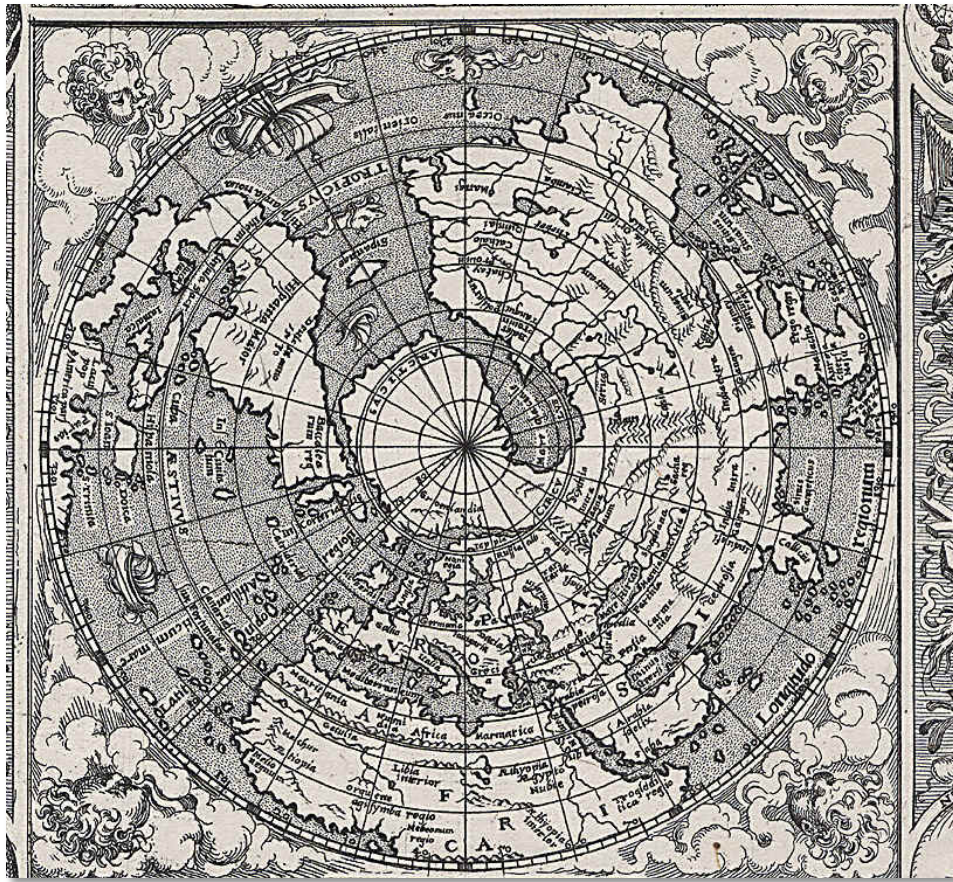


*A globe by Franciscus Demongenet, 1552-1560, showing a large Arctic landmass (#387) marked GROENLANDIA and attached to Northern Russia.*



*Facsimile of the Demongenet globe produced by Dr. D. W. Larson, Emeritus Professor  
University of Guelph, Guelph, Ontario, Canada*





*Polar view on the two polar hemisphere map by Jost Amman, 1564, Globus Terrestris (#402) Showing a large landmass connected to Eurasia  
ca. 11.8 x 8.1 in. (ca. 30 x 20.5cm), diameter of hemispheres 5.11 in. (13cm)*

Jost Amman (Zurich, 1539 -91), one of the outstanding artists of the 16<sup>th</sup> century, who produced paintings, drawings, woodcuts, and etchings during the early part of his time in Nuremberg also created a *Globus Terrestris* [terrestrial globe], showing the northern and southern hemispheres, and a corresponding *Globus Coelestis* [celestial globe]. The year is given alongside Amman's monogram on the celestial globe, and thus we can assume that the terrestrial globe was probably produced at around the same time. The folios are extremely rare. The wide decorative border shows a series of astronomical and geodetic measuring instruments, as well as six portraits of medieval and classical cosmographers. The globes of Georg Hartmann (ca. 1535; #359) and Francois Demongenet (Venice, ca. 1560; #387) apparently served as the basis for the drawings of the regions of the earth, the figures and ships, as well as the inscriptions. North America is separated from Asia by a relatively broad arm of the Pacific Ocean (ca. 30-45 degrees wide), and in the north, only a narrow arm of the sea separates it from a hypothetical northern polar landmass that is connected to Northern Europe and the north of Asia by an isthmus, also some 30-45 degrees wide. This unusual world map has been located in three institutions: the Vatican's Apostolic Library, the National Maritime Museum, and Harvard University. None is certain as to its origin.



*The Evolution of the Arctic Regions on Early Maps*

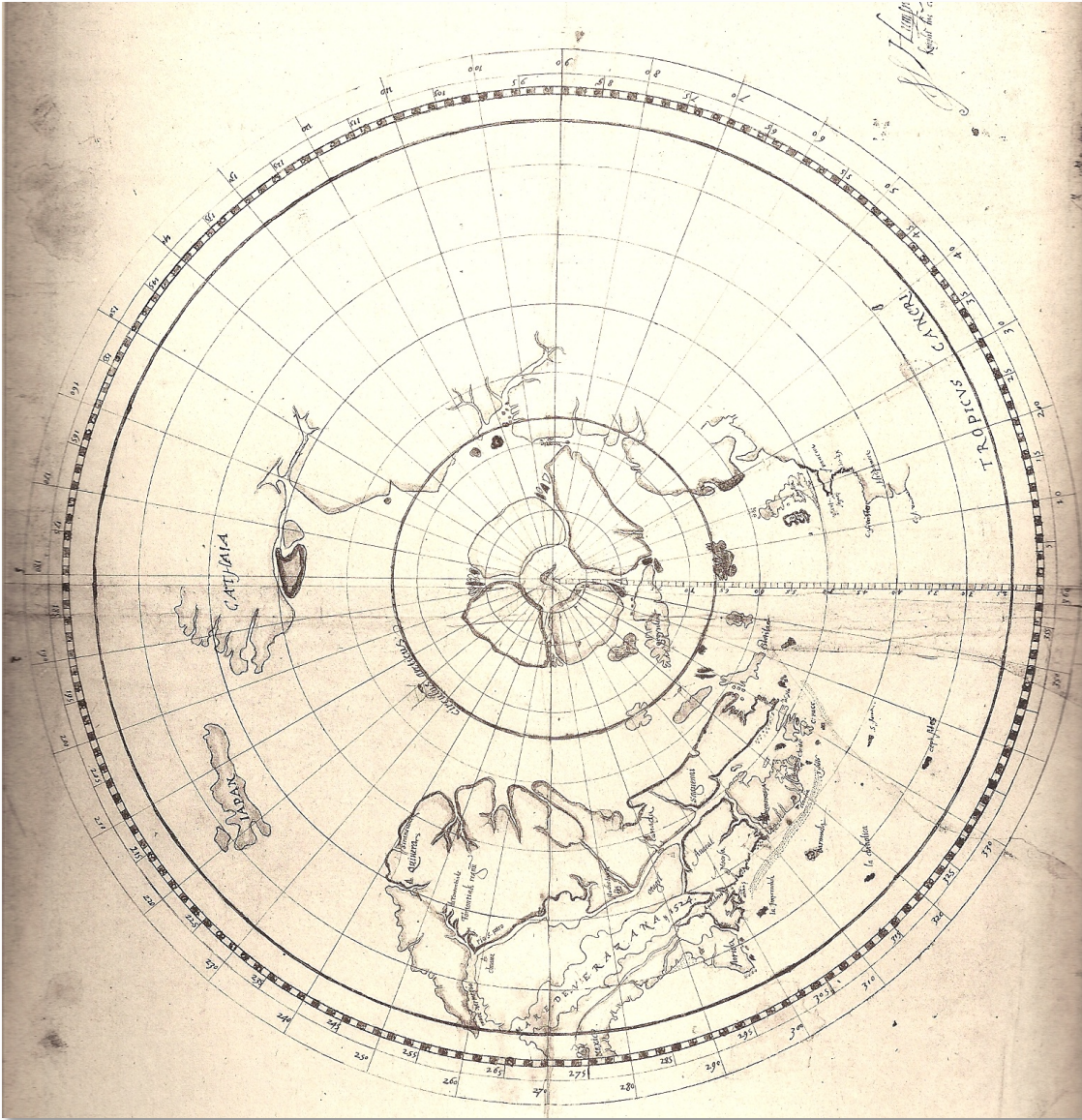


*1577 Cartaro globe detail: Asia and the North Pole (#415.2) showing a hint of a landmass connected to Eurasia*



*Facsimile of the 1577 Cartaro globe*  
*Facsimile produced by Dr. D. W. Larson, Emeritus Professor*  
*University of Guelph, Guelph, Ontario, Canada*





A General Map of the Arctic Regions showing parts of North America, 1582 by Dr. John Dee (#418). Shows that Englishmen interested in western voyages had gathered together all the available information about the possible routes for the passage to the Orient. In the case of some of the possibilities that Dee depicted, such as Verrazzano's Sea, one can discover the probable original in the Harlien mappemonde (#382.1), a manuscript map of the 1540s. In the case of other possibilities, such as that of the Saint Lawrence route, the ideas come from Jacques Cartier's voyages. In the case of still other possibilities, his source is unknown. The inclusion in Dee's map, as in Michael Lok's (#419), of the southern route shows that information about the lower part of North America was available in England by 1582, even if some of the key books containing it had not yet been reprinted or translated there, as they were later to be under the direction of Hakluyt the Younger. Dee prepared maps and instructions for several explorers, including John Davis, Francis Drake, Martin Frobisher, Humphrey Gilbert, and Walter Raleigh, in their well-known attempts to search out trade routes and settle newfound lands. As Dora Polk puts it "Water, water, everywhere, is the way John Dee, the Elizabethan Welsh scholar, conceived of the New World in this map which surfaced in 1583." No bottlenecks occur across the north or into the South Sea. Supporting several Northwest



## *The Evolution of the Arctic Regions on Early Maps*

*Passages, his Atlantis, as he called North America, is carved into many islands by transcontinental waterways. A strait runs from the mouth of the St. Lawrence to the head of the Gulf of California. An extraordinary Verrazzano Sea runs from Virginia to outlet in Mexico. California is well on the way to becoming conceptualized as one of Atlantis' many islands. The polar projection shows a wide seaway north of Atlantis giving into the South Sea. Atlantis is carved into islands by several waterways. First the St. Lawrence "river" slashes the continent to emerge at the nook of the Gulf of California where sixty or so years before, Cortes had expected a river-that-might-turn-out-to-be-a-strait. Still another continent-spanning waterway is an unusual Verrazzano Sea running all the way from Virginia to the mouth of the Gulf of California. It joins the South Sea on the coast of New Spain opposite La Punta de California or Cabo San Lucas. There are additional links of water between these waterways. One strait connects the St. Lawrence-to-Gulf of California waterway with the Verrazzano Sea.*

*Another with the Atlantic Ocean about where the Penobscot River flows, making New England an island. And yet another auxiliary strait connects with the great ocean to the north.*



*North Pole on the 1587 Urbano Monte polar world map (#420, see below)*





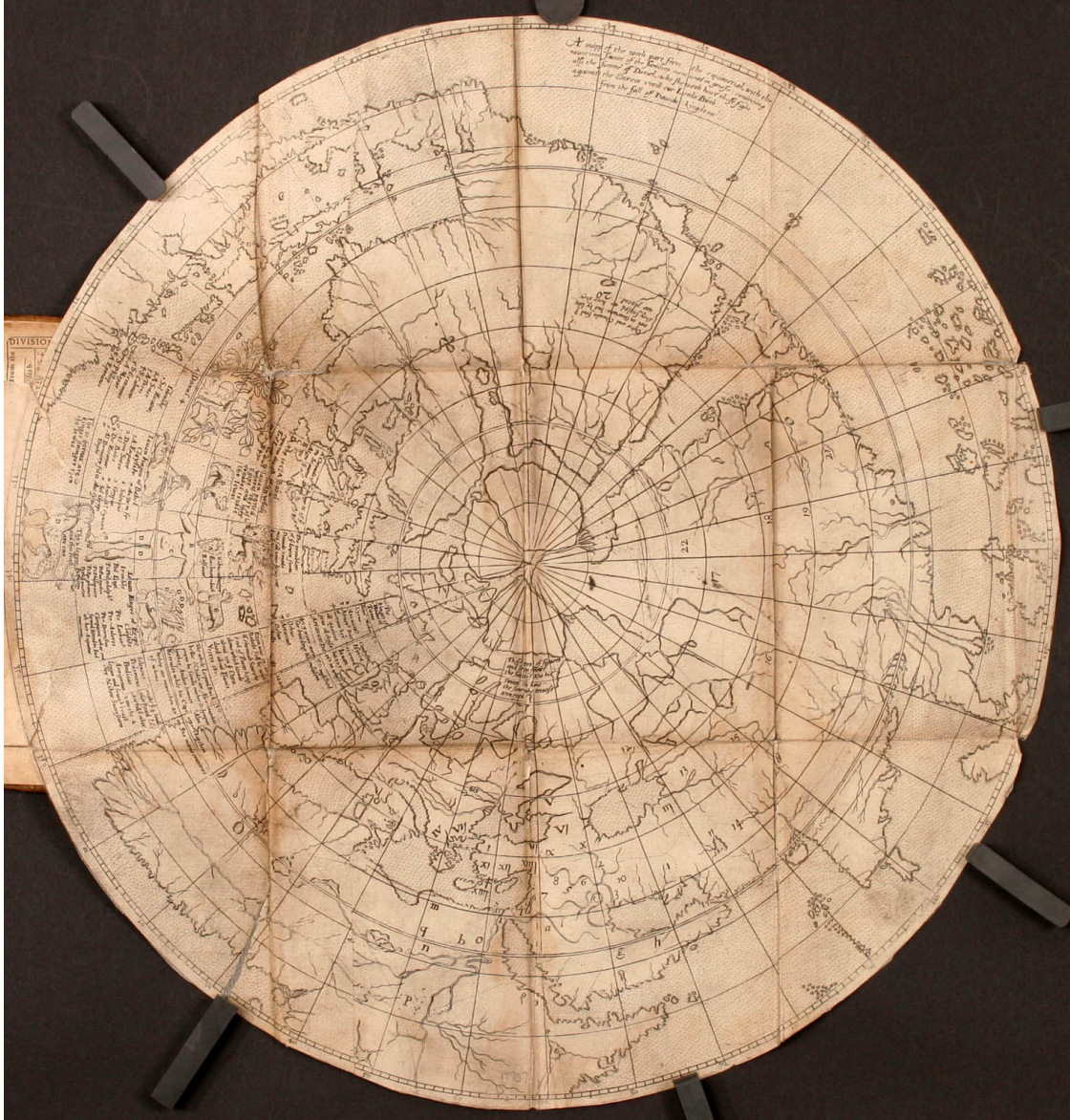
*Urbano Monte (Monti), 1587 (#420)*

*An extraordinary 60-sheet manuscript world map made in 1587 by Urbano Monte located in the David Rumsey Map Collection at Stanford University. At 10 feet square, this map or planisphere is the largest known early map of the world. It was hand drawn by Monte in Milan, Italy, and only one other manuscript copy exists. The digitally joined 60 sheet map image above is the first time that the map Monte made has been seen as one unified map – as Monte intended – in the 430 years since it was created.*

*Of great interest is the attempt Monte makes to make his map not just a geographical tool but to show climate, customs, length of day, distances within regions – in other words, to create a universal scientific planisphere. In his dedication on Tavola XL he specifies how to arrange the sheets of the planisphere and makes it explicit that the whole map was to be stuck on a wooden panel five and a half brachia square (about ten feet) so that it could be revolved around a central pivot or pin through the North Pole. This was never done, but now it can be done virtually – Monte's 60 sheet world map digitally assembled into a 10 foot planisphere: The projection, more than nine feet in diameter, is made up of 60 smaller maps, with the North Pole at the center.*



## *The Evolution of the Arctic Regions on Early Maps*



*A mapp of the north part of the equinoctial . ., 1587 (#421.4)*

*This remarkable circular map depicts a north polar azimuthal equidistant projection extending to the equator. The Postel projection is named after the French mathematician Guillaume Postel (1510-1581). The engraving of the map is traditionally attributed to William Rogers, and, if true, then the map is arguably the earliest English world map engraved on copper. However, the historian R.W. Shirley thinks that it might have been engraved by Jodocus Hondius while living in London. If this is the case, then the map ranks among the earliest engraved works of the master mapmaker.*



*The Evolution of the Arctic Regions on Early Maps*



*Detail of the Arctic region displaying a polar landmass connected to Eurasia.*



*Mapamundi Realizado Por El Cartografo Real De Felipe II En 1588. (#422)  
Depicting the island configuration at the North Pole, detail below*



## *The Evolution of the Arctic Regions on Early Maps*



*Detail showing the traditional island configuration and two versions of Greenland*





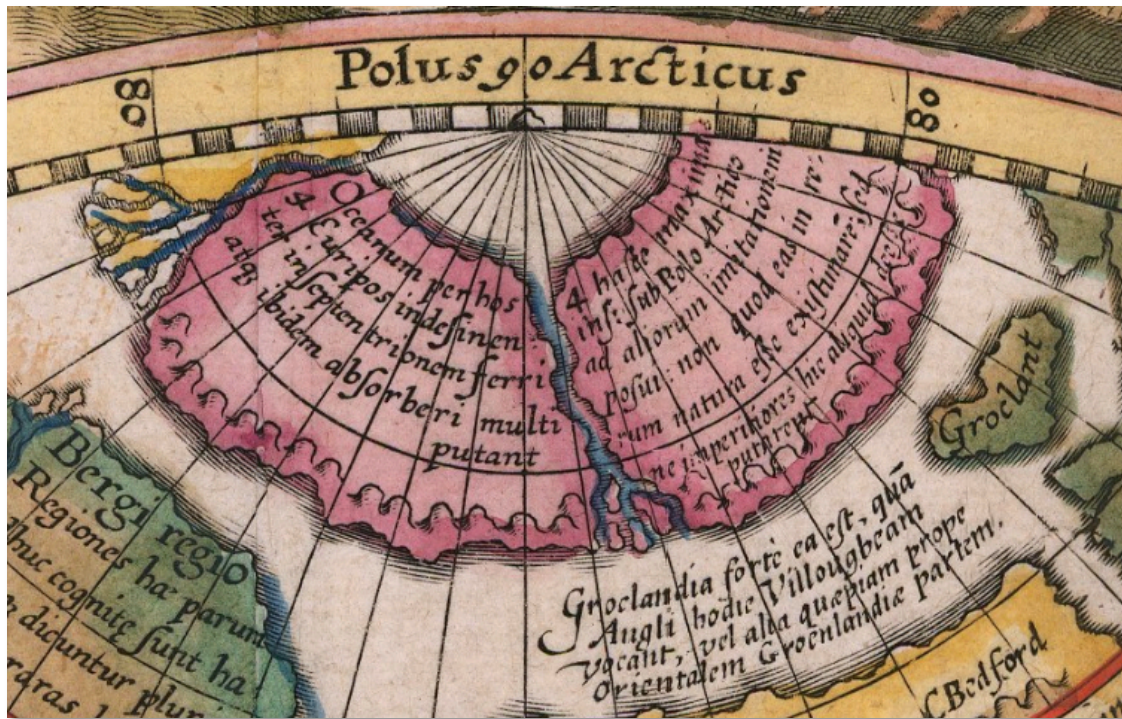
*Hemispheriu ab Aequinoctiali Linea, ad Circulu Poli Arctici / Hemispheriu ab Aequinoctiali Linea, 1593, by Cornelis de Jode (#433) displaying the four island configuration.*



## The Evolution of the Arctic Regions on Early Maps



*Orbis Terrarum Typus De Integro Multis in Locus Emendatus auctore Petro Plancio, 1594 showing the North Pole in a four island configuration*

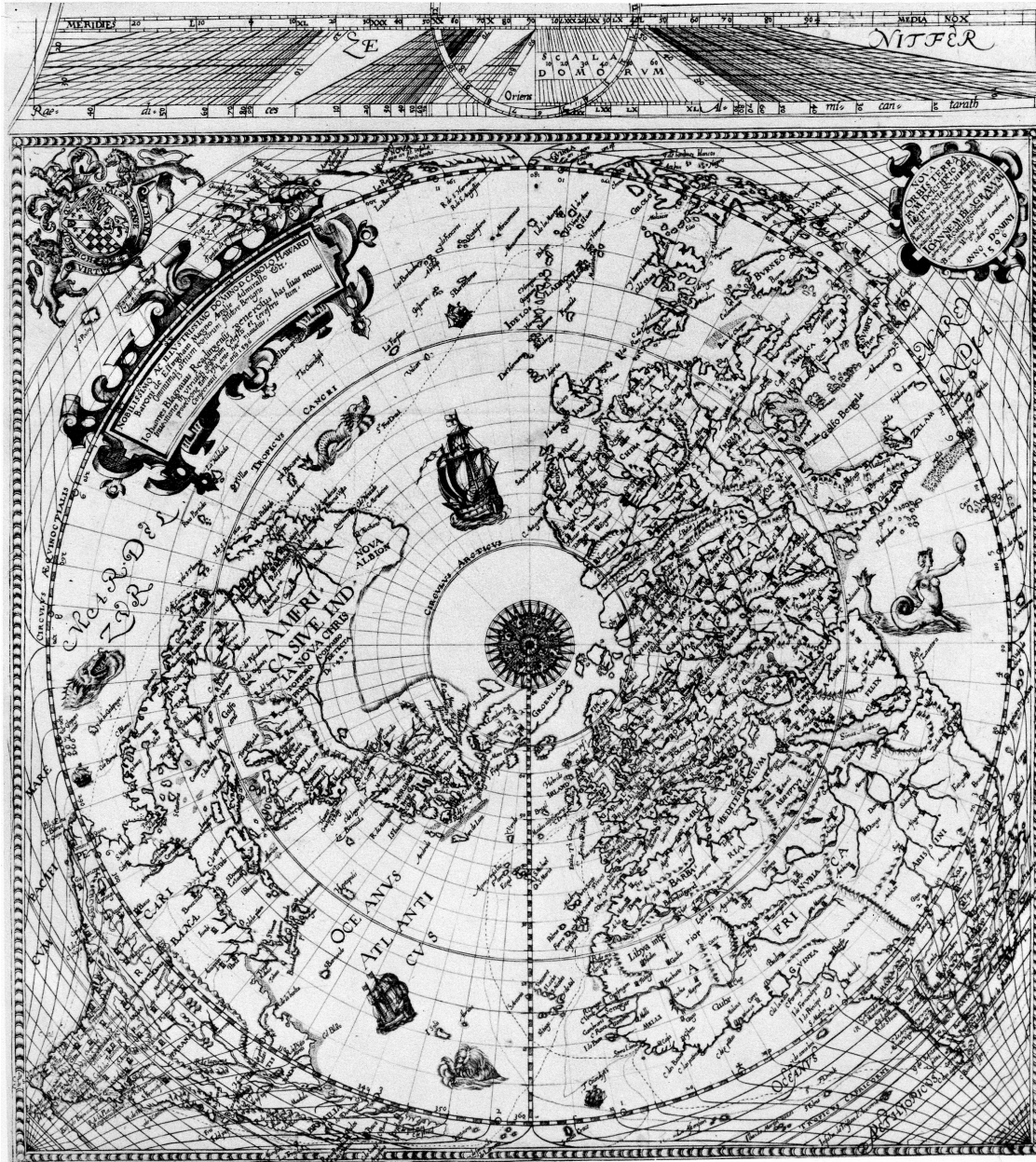


*Western Hemisphere*



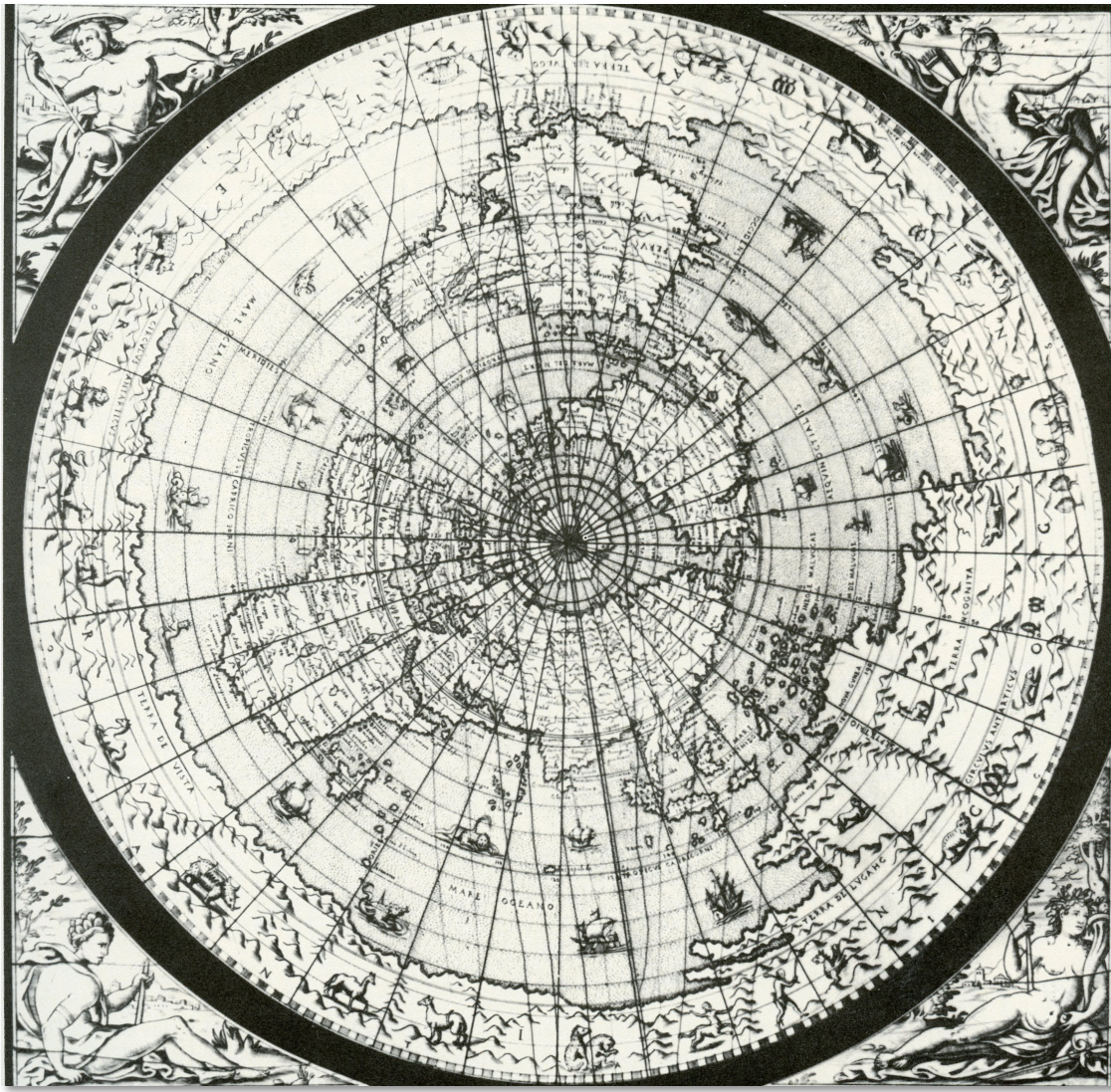


*Eastern Hemisphere*



*Polar Stereographic Projection with Extensions to a Square, by John Blagrove, 1596. The English engraver Benjamin Wright prepared two charts - one celestial and one terrestrial - to accompany this astronomical treatise by John Blagrove, a mathematician of Reading. The world map is on a north polar projection extending to the equator with ultra-quatational extensions in all four corners. The tracks of the circumnavigations of Drake and Cavendish are marked and there is an intricate coat of arms and cartouche with a dedication to Howard, Baron Effingham, the Lord High Admiral and victor of the Armada. At the top of the map is an unusual revolving rule. Or zenitfer, used for astrolabe calculations. Note that the Mercator configuration of the four islands has been abandoned. (British Library Harl. 5935 (15) Ashmole 417 No. 237*





*Polar Projection by Gennaro Piccaro, 1597.*

*World map engraved on ivory and forming the pull-out writing table of a large Neopolitan cabinet now in the Museum für Kunst und Gewerbe, Hamburg. The map is on a north polar azimuthal projection with equidistant concentric circles of latitude: one of the first maps to portray the world in this way. Inevitably there is increasing distortion of areas towards the extremities, disguised by a large encircling southern continent. This region is shown with impressive ranges of mountains and is populated by a whole menagerie of real and imaginary animals. The map is engraved in elegant Italian style reminiscent of maps in 'Lafreri' atlases and is signed and dated. The geographical features, however, much more closely relate to the world maps on a polar projection by De Jode and his predecessor Postel than to Italian sources. According to a study by Dieter Alter the cabinet which the map appears was probably made by Giacomo Fiammingo and Giovanni Battista de Curtis. It was acquired by Hamburg in 1976. By coincidence, in the same year, Rodney Shirley came across a nineteenth-century ink sketch of an identical map in the Bibliotheque Nationale, stated to have been copied from one executed in ivory in a large piece of furniture in the Institut National des jeunes sourds de*



## The Evolution of the Arctic Regions on Early Maps

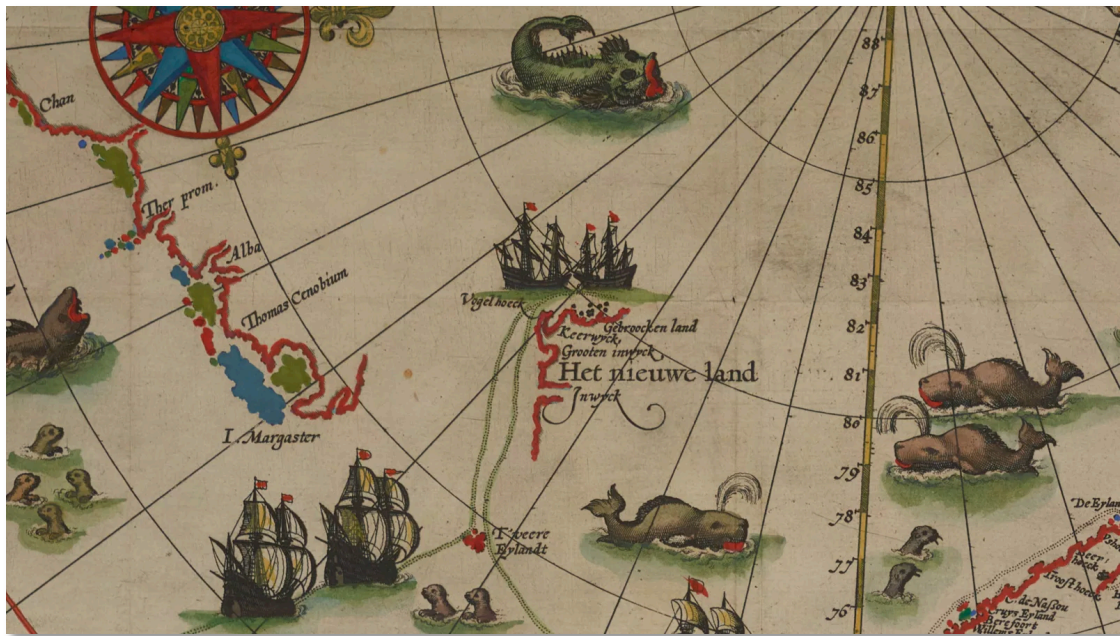
Paris. Efforts to trace the present whereabouts of the cabinet once in the Institut National have proved unavailing. One or two other cabinets with engraved panels of maps are known, the maps usually following those by Forlani or Bertelli of the 1560s.

BN Res.Ge.D.7828 (ink drawing).



Sea creatures abound in this 1598 map by the Dutch explorer Willem Barents and Cornelis Claesz. He drew it while stuck in sea ice on his third trip to the Arctic. Note the total absence of polar landmasses. Here Spitsbergen is mapped for the first time/ the map (labeled "Het Nieuwe Land"). The map also depicts the route of the two ships on Barentsz's last polar voyage in 1596-97. Art and science meet off the coast of Greenland. You can see it for yourself on William Barentsz's 1598 map of the Arctic. The map has plenty to catch your eyes, from ornate compass roses to sea monsters to elaborate frames for the map's text. As if fearing we might be too overwhelmed to look too closely, the map offers a literal path into its core. There, a small group of ships gather off the coast of the Netherlands at the beginning of the path of Barentsz's expedition into the arctic. By starting in the lower left corner, you can safely follow the track of Barentsz's ships from Dutch shores past pods of seals, up into the Arctic circle. As you follow the ships along the path, you can see the scientific advances of Barentsz's Arctic expeditions. To the left, you can find the progress in mapping the coast of Greenland. Ahead, you can find the barest hints of a coastline labeled "Het nieuwe land" (literally, the new land) – what is now Svalbard.





*But on the three other sides of Svalbard, fanciful, artistic sea monsters roar their terrible roars and crash their menacing tails. In these areas beyond the reach of Barentsz's scientific knowledge, the map relies on its artistry to retain our attention. For all their otherworldliness, these artistic elements are more than just flourishes. They also help distinguish between land and sea without pretending to establish the precision of a definitive coastline. You can see this most clearly at the end of Barentsz's path on Novaya Zemlya. Here, a small house is labeled "Het behouden huys," noting where Barentsz and his crew were trapped for the winter on their final voyage. At the house, the coastline abruptly ends. Above and to the right, seals swim close by and a sea monster lurks farther out. Below, the coastline restarts in the more familiar Russian territory alongside a red-coated driver riding a sleigh with reindeer.*



"Het behouden huys" marks where Barentsz and his crew were trapped for the winter on their final voyage. Seals fill in the incomplete coastline, which ends abruptly at Het behouden huys.



At the house, the coastline abruptly ends. Above and to the right, seals swim close by and a sea monster lurks farther out. Below, the coastline restarts in the more familiar Russian territory alongside a red-coated driver riding a sleigh with reindeer. (Santa?). This is not a mythical Santa but a *Samoyed*. The narrative account of Barentsz's voyage



describes their sleds with “one or two *hartes* [deer] in them, that runne so swiftly with one or two men in them, that our horses were not able to follow them.”

The archipelago of Spitsbergen - or *Svalbard*, as it is known today - would seem like an unlikely area of interest for early cartographers. Located very far north, halfway between Norway's North Cape and the North Pole, covered with snow, ice and rugged mountains, Spitsbergen was viewed as uninhabitable except for during a few months of summer. It had no indigenous population and it was located far from the normal sailing routes of European commerce.

Yet during the 17<sup>th</sup> century the mapping of Spitsbergen flourished, and it is interesting to understand why it was important at that time - important to commercial and state interests, and also important to cosmographers.

Over the years various claims have been made as to who first discovered the archipelago. Some have claimed that Vikings discovered it in 1194, based on a comment found in the *Icelandic Annals* for that year. Others have claimed that *Pomor* hunters and trappers, from the White Sea area of Russia, discovered the islands in the mid-16<sup>th</sup> century or earlier. But the first documented discovery was by the Dutch expedition of 1596, most often associated with the name of its chief pilot, Willem Barentsz. This was on the third, and last, of three expeditions made by Barentsz (in 1594, 1595 and 1596) in search of a northeast passage to the Indies. This last voyage, during which Spitsbergen was discovered, is better known for the harrowing tale of Barentsz's ship trapped in the ice off the northeastern tip of Novaya Zemlya, the crew overwintering there, and escaping the following spring in two open boats. Sadly, Barentsz himself died on the return trip.

The story of his last voyage, including the discovery of Spitsbergen, was written by Gerrit de Veer and published in Amsterdam, by Claesz, in 1598. This was the same year Claesz also published the famous map, usually referred to as Barentsz's polar map. The depiction of Spitsbergen -- the first printed map on which it is shown - is pretty minimal. Only a bit of the northwestern coastline can be seen, and only a few toponyms are given. Though labeled *Het Nieuwe Land* [The New Land], an extract from Barentsz's log, published in de Veer's account, says that the discoverers gave this land the name Spitsbergen on account of its pointed mountains.

It was eleven years after Barentsz's discovery before Spitsbergen was again sighted. In 1607, on the first of his four expeditions in search of a northern route to the Indies, Henry Hudson saw roughly the same part of the northwest coast that Barentsz had seen. The map that records this was published by Jodocus Hondius in 1611. The depiction of Spitsbergen on this map, though clearly modeled on the Barentsz map, adds a couple of English toponyms (including Haklüt's *Hedland*).

*The Evolution of the Arctic Regions on Early Maps*



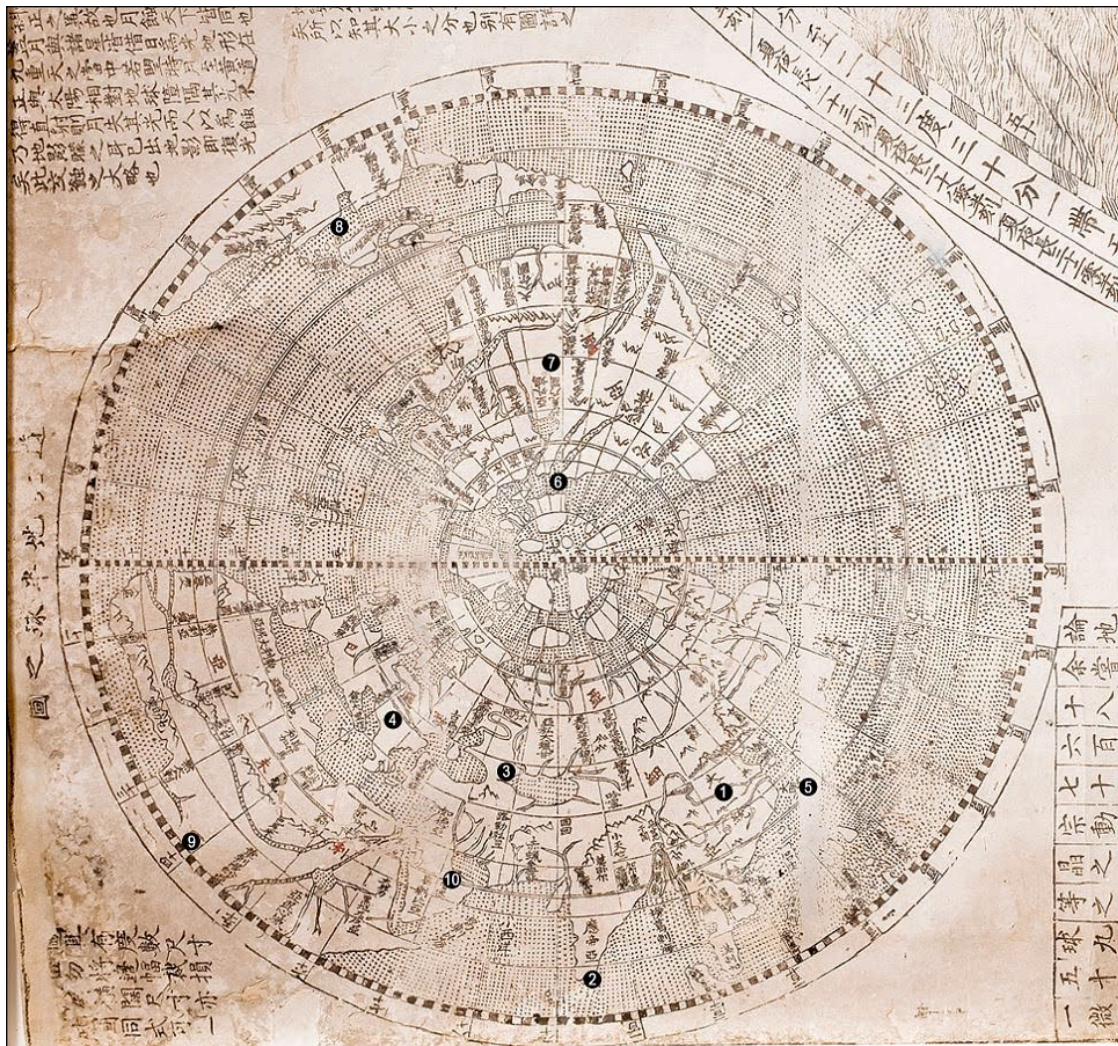
*An equatorial orthographic projection, tilted to show the island configuration at the North Pole, by Fausto Rughesi, 1597*



## The Evolution of the Arctic Regions on Early Maps

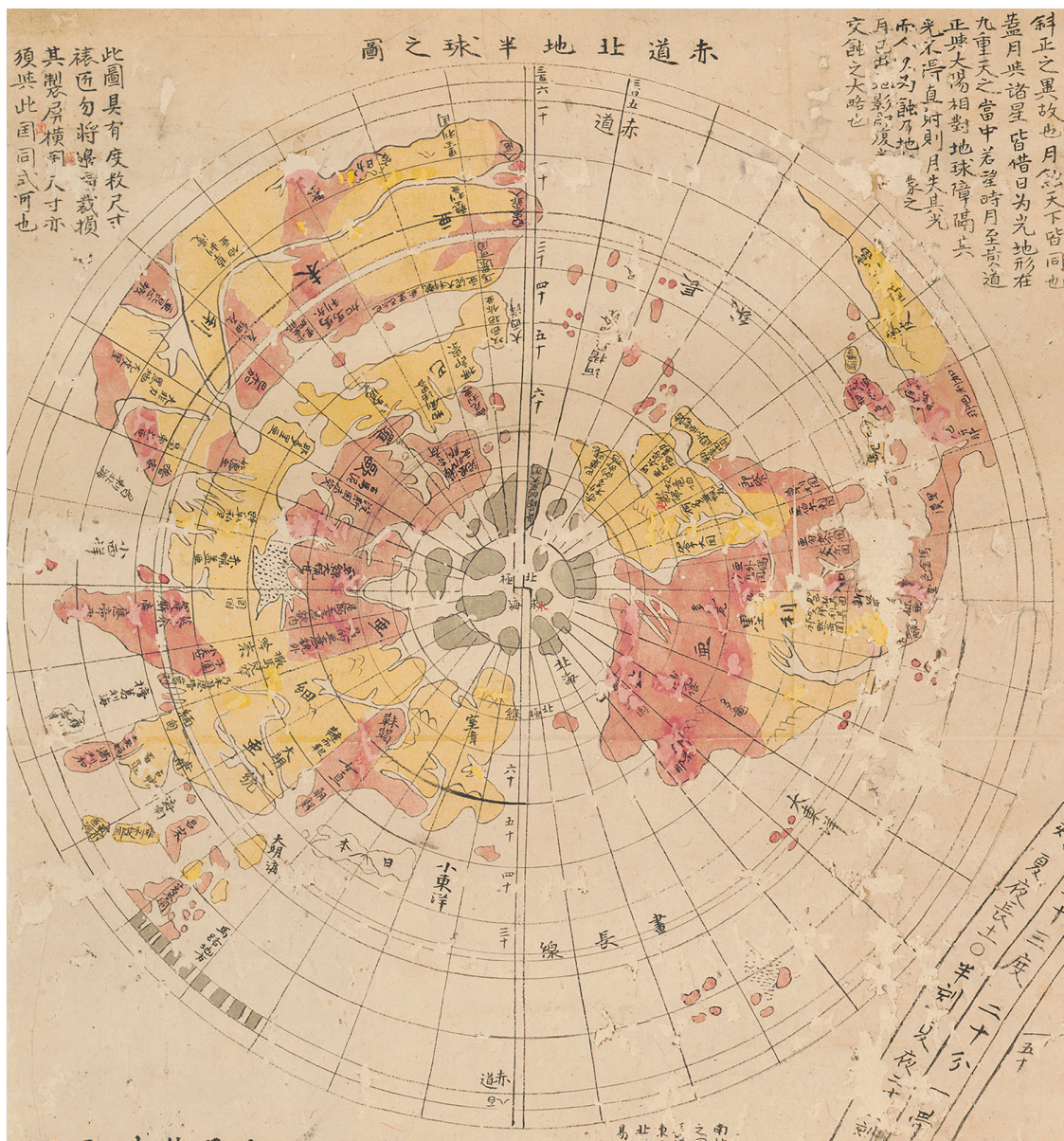


Insert on the 1600 world map by Arnolfo di Arnolfini, a 10-sheet map modeled on that of Plancius, 1592 and obviously also derived from the 1569 Mercator world map.



Father Matteo Ricci's 1602 world map Kunyu Wanguo Quantu 坤輿萬國全圖  
Detail: inset of a North Pole projection, based upon Ortelius' world map (#441)





*Detail of northern polar projection, upper left corner, Map of the World, late 18<sup>th</sup> or early 19<sup>th</sup> century, MacLean Collection, MC17363*

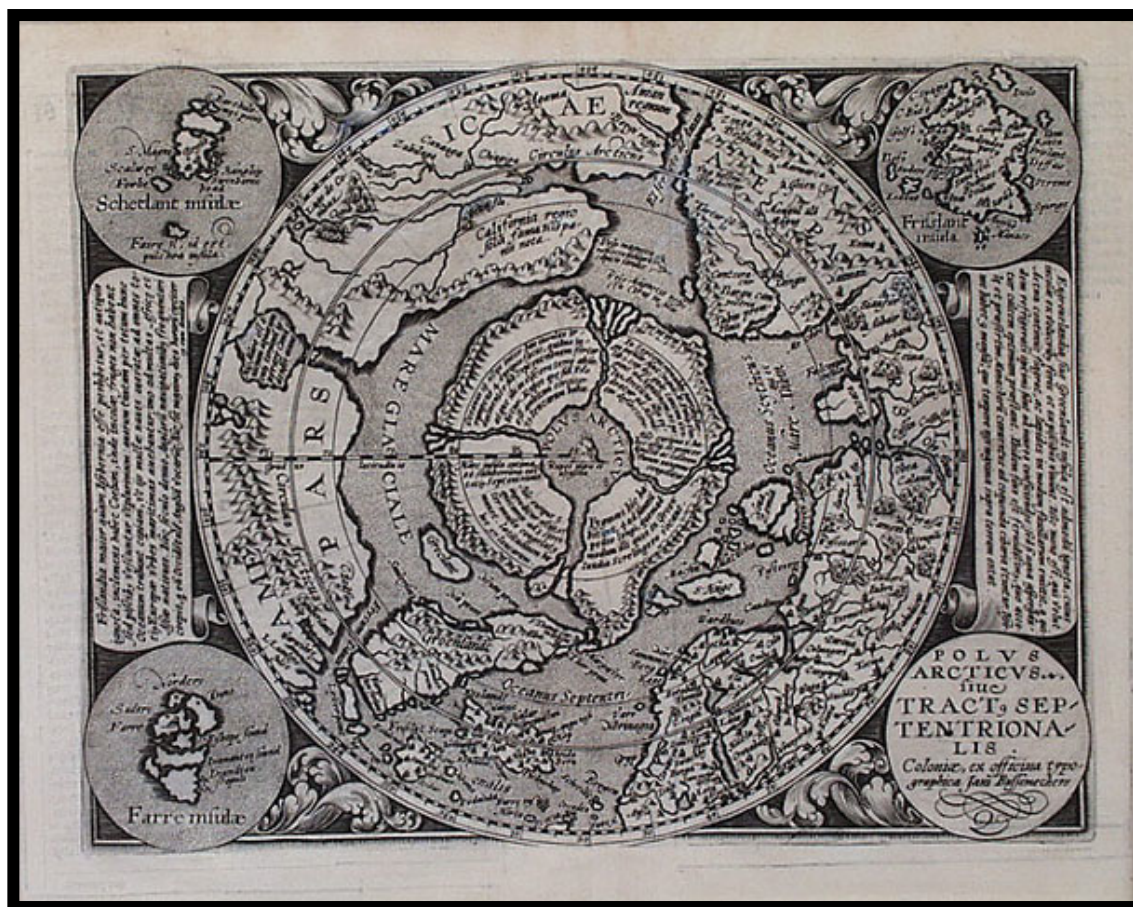






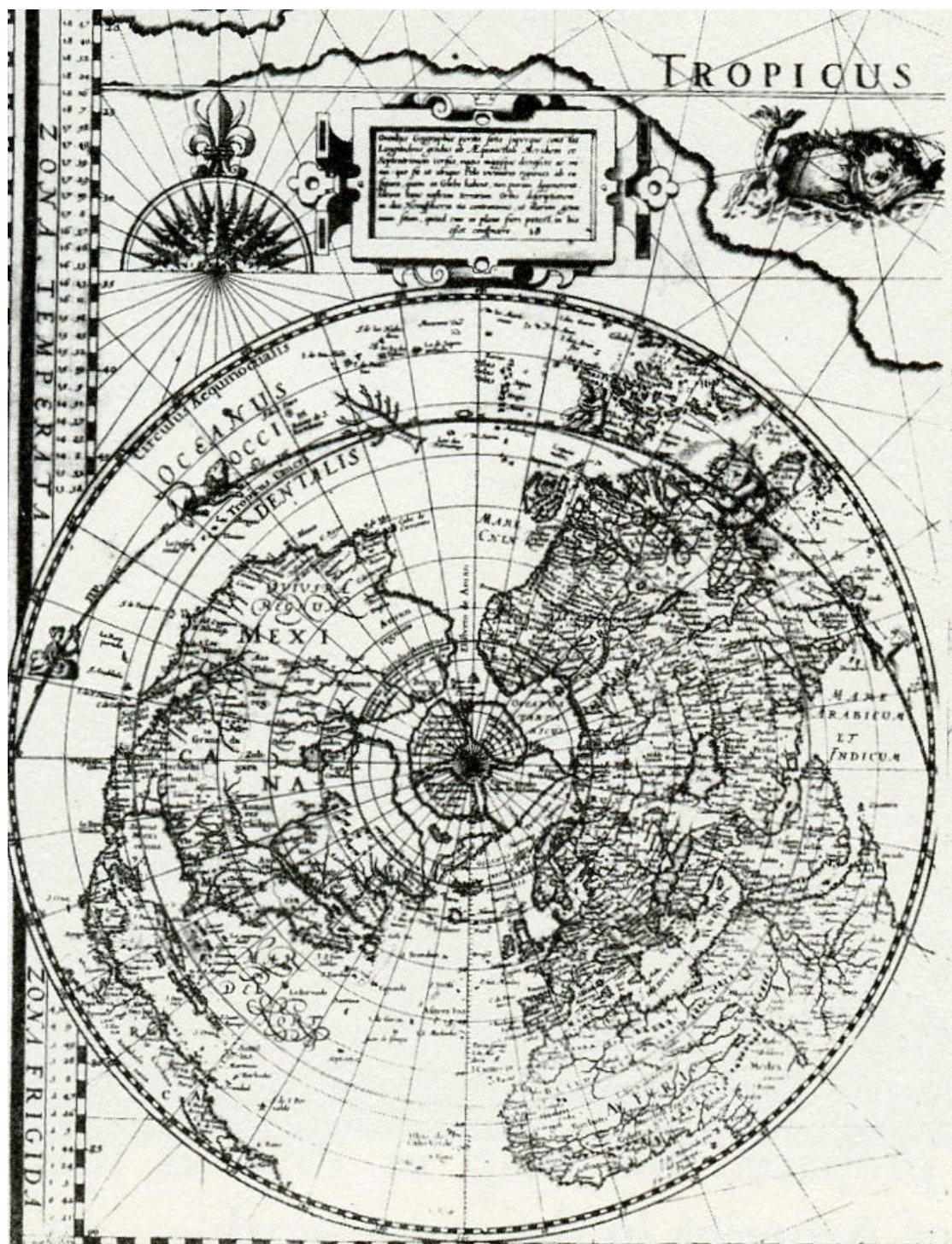


*North Pole from a Japanese world map, 17<sup>th</sup> century, Namban Bunka-kan.*



Smaller version of Mercator's polar map by Matthias Quad, ca. 1600





An inset of the North Pole on the 1604 world map by Josua van den Ende with the four island configuration





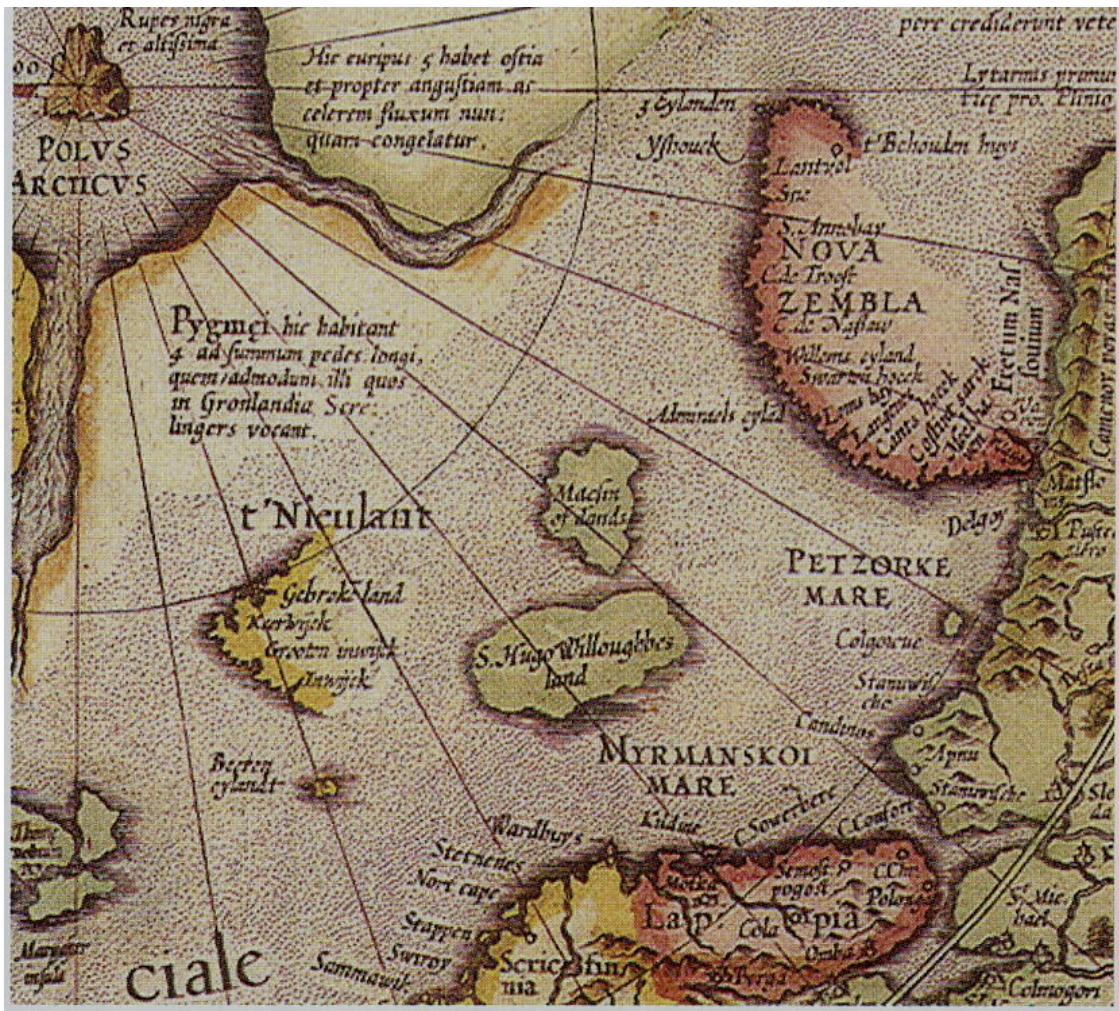
The North Pole on the 1606 Mercator map by Jodocus Hondius, notice the differences in the “pygmy” landmass. Jodocus Hondius, an engraver, printer, and publisher in Amsterdam, made important changes to the map after purchasing the plate from the Mercator family in 1604. Hondius altered Mercator’s geography in two ways: first, he joined the two islands of Nova Zembla, although the eastern, ice-bound coast of the island still remained undetermined; second, he added Spitsbergen, discovered by Willem Barentsz in 1596, in the process destroying the neat symmetry of the four Arctic landmasses that Mercator had imagined.

For the first edition of the *Atlas* published under his imprint, in 1606, Jodocus Hondius updated Mercator’s North Pole map by erasing part of one of the polar islands and putting in Spitsbergen. Looking at this map one can almost sense the discomfort that Hondius must have felt as he tried to reconcile the existing polar-island depiction with the hard facts brought back by Barentsz’ last voyage. Here was an island where a much larger landmass was expected to be. It is almost as if Hondius is asking you to choose which depiction to accept, since both cannot be true.

Hondius also added a new map of Europe to the 1606 edition of the *Atlas*. The northern edge of the map extends into the area that would include the polar islands derived from the *Inventio Fortunatae*, but no sign of these islands is shown. Instead,



Hondius includes a small note saying “Gerard Mercator and others have drawn an Arctic continent at this place, but our navigators [i.e. the Dutch], have not seen any sign of it, having travelled past 81° North on their voyages in 1595 and 1596”



Detail to show the discovery of Spitsbergen as well as the findings from the English voyages

Though the discovery of Spitsbergen played an important role in the evolution of late 16<sup>th</sup> and early 17<sup>th</sup> century cosmography, it also played a role, much larger than might be expected, in the cartography of the period.

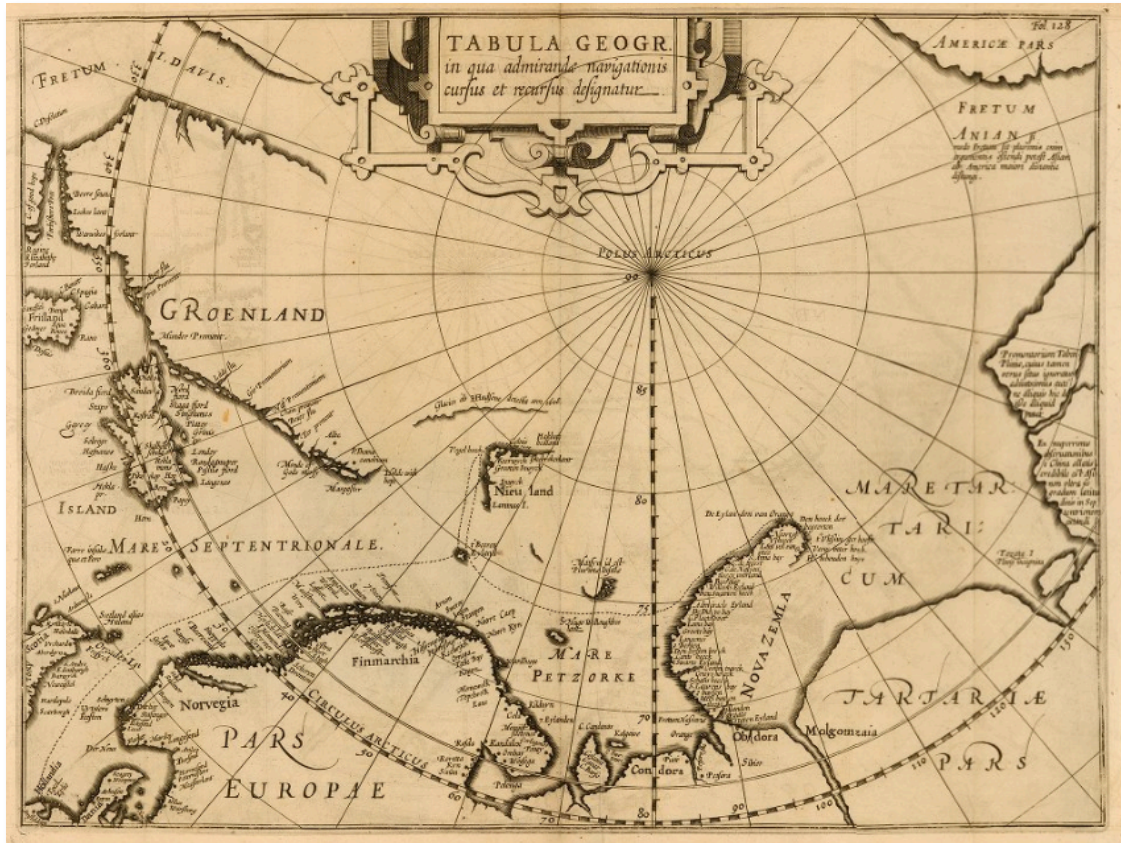
Once Spitsbergen was no longer an area of economic interest at the end of the 17<sup>th</sup> century, the land became *Terra Nullius* or “No Man’s Land”, unoccupied and unclaimed. By the beginning of the 18<sup>th</sup> century there were very few major landmasses on the globe that were not claimed as part of the empires of one state or another. Antarctica was one of those few and Spitsbergen was another. Not surprisingly, interest in the mapping of Spitsbergen waned along with the economic interest. Unlike the 17<sup>th</sup> century atlases of Blaeu and Janssonius, atlases produced by 18<sup>th</sup> century map-makers did not include separate maps of Spitsbergen.

Spitsbergen did continue to attract the attention of scientific expeditions, and, in the early 20<sup>th</sup> century, the archipelago regained some economic interest due to its mineral resources, particularly its coal. Though these later efforts, especially the



## The Evolution of the Arctic Regions on Early Maps

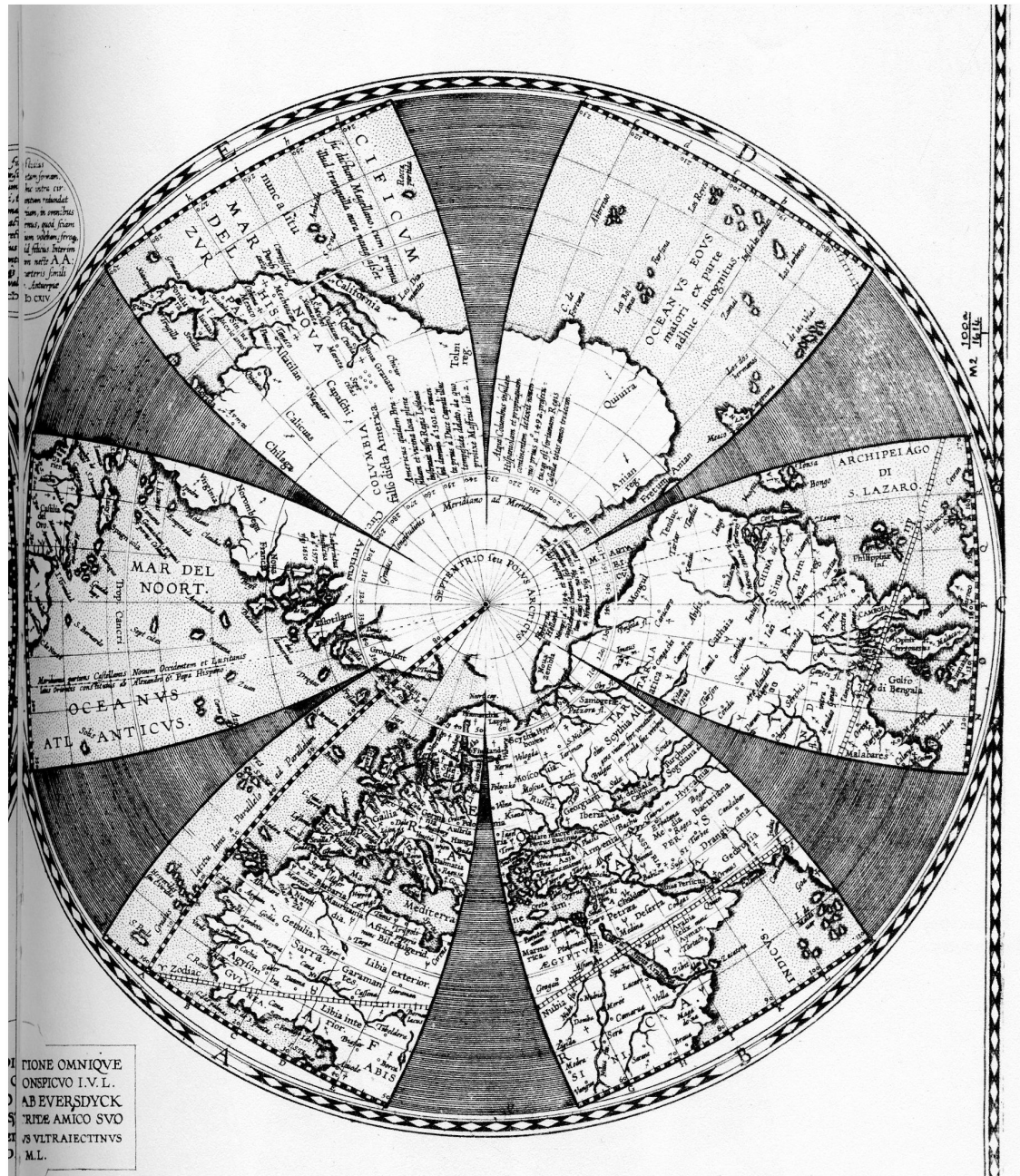
scientific expeditions, produced some maps, the cartographic attention these islands received in the 17<sup>th</sup> century was never recaptured. A bit like Tycho Brahe's supernova, the mapping of Spitsbergen started suddenly, grew to a bright peak, and then faded away.



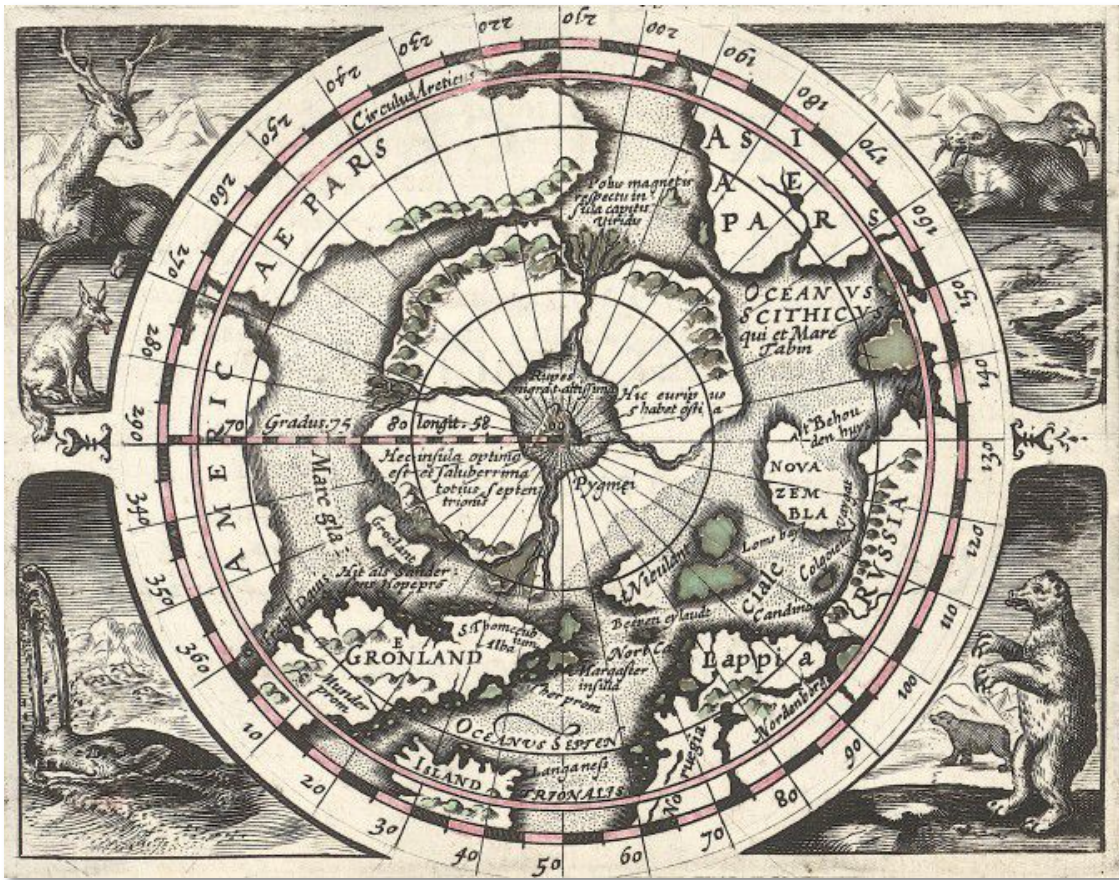
*Tabula geogr. in qua admirande navigationis cursus et recursus designatur, 1611*  
Judocus Hondius

Map of the Arctic pole, including Frisland, an ill-defined Greenland, northern Russia, the northern part of the Scandinavian peninsula, Novaya Zembla, here identified as Nova Zembla. Includes the Strait of Anian and Davis Strait.





A polar projection by Franciscus Verhaer, 1614, showing no distinct polar landmass



*Regiones Hyperboreae*, 1616, Flemish map, Petrus Bertius

*Regiones Huperboreae* is a pole-centered 1616 map by the Flemish theologian, historian, and cosmographer to the court of Louis XIII, Petrus Bertius. Its bear in the margins rears up on hind legs, a most impressive posture—and, like the walrus, is rendered realistically compared to the map's whale, reindeer, and wolf or Arctic fox. While biological knowledge gained from captive white bears had improved, the Arctic's geography still held big secrets. On the Bertius map, a polar sea rumored to be ice-free year-round lies enclosed by a landmass dissected by four narrow channels.

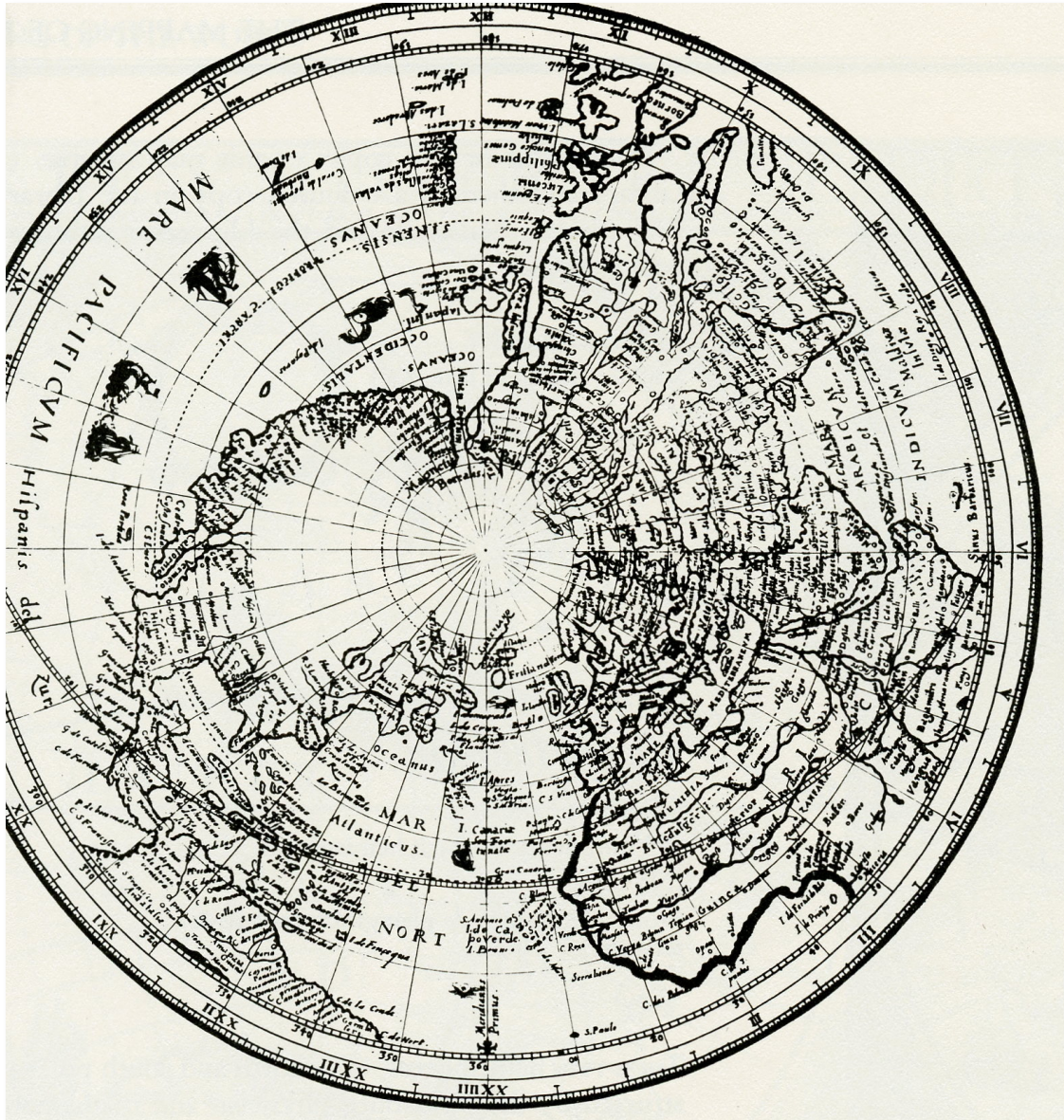
What began as doubt or uncertainty simply grew over time until the polar-island theory was completely dropped. By 1636 (when Jodocus' son, Henricus, was publishing the Mercator Atlas), the original North Pole map was gone, replaced by a completely new map that showed not a trace of the polar islands.

Like Hondius, Petrus Plancius went through a similar process of initially accepting a polar-island view of the Arctic, then having some doubts that were explicitly expressed in maps, and finally dropping the polar-island theory completely. If anything, Plancius was quicker than Hondius in his willingness to accept new data that cast doubts on the prevailing theory. Though reports from the 16<sup>th</sup> century English voyages to the north were clearly an important part of this new data, it was the discovery of Spitsbergen that really sealed the fate of the long-held *Inventio Fortunatae* theory. Much as the supernova observed by Tycho Brahe in 1572 upended long-held cosmological ideas about the fixity of the heavens, so the discovery of



### *The Evolution of the Arctic Regions on Early Maps*

Spitsbergen, 24 years later, began a process that eventually upended long-held cosmographical ideas about the earth's polar areas.



*A polar projected map by Isaac Habrecht, 1628, realistically showing the lack of knowledge on the northern part of Canada and the North Pole*



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Francesco Sambiasi's world map (c.1639), Ghent version. Printed from wood blocks on a single sheet of rice paper measuring approximately 108 x 72.5 cm.

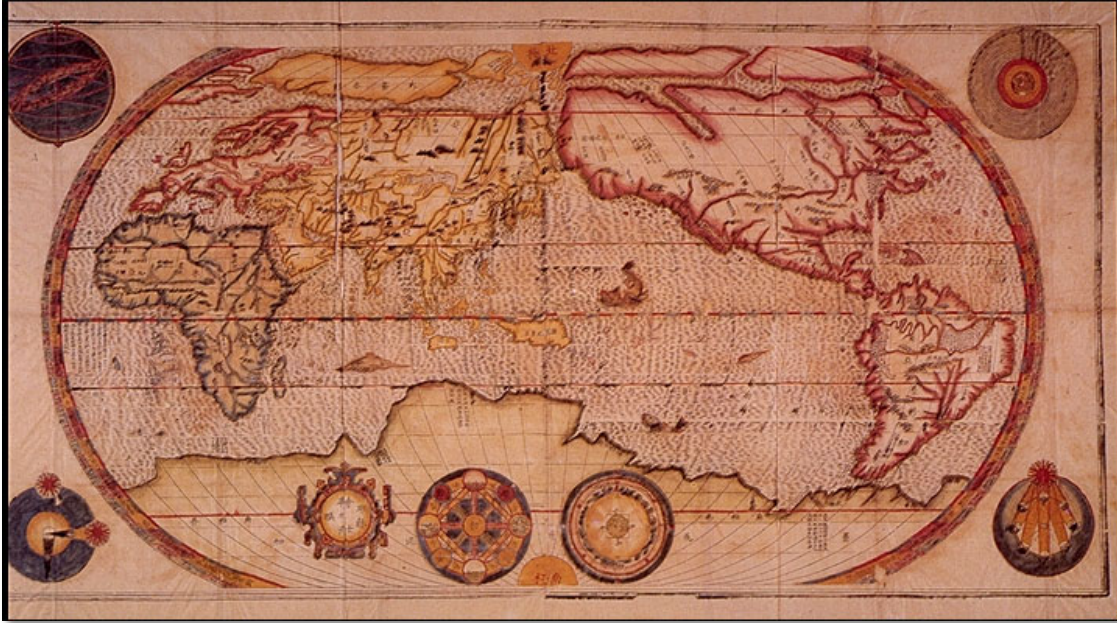




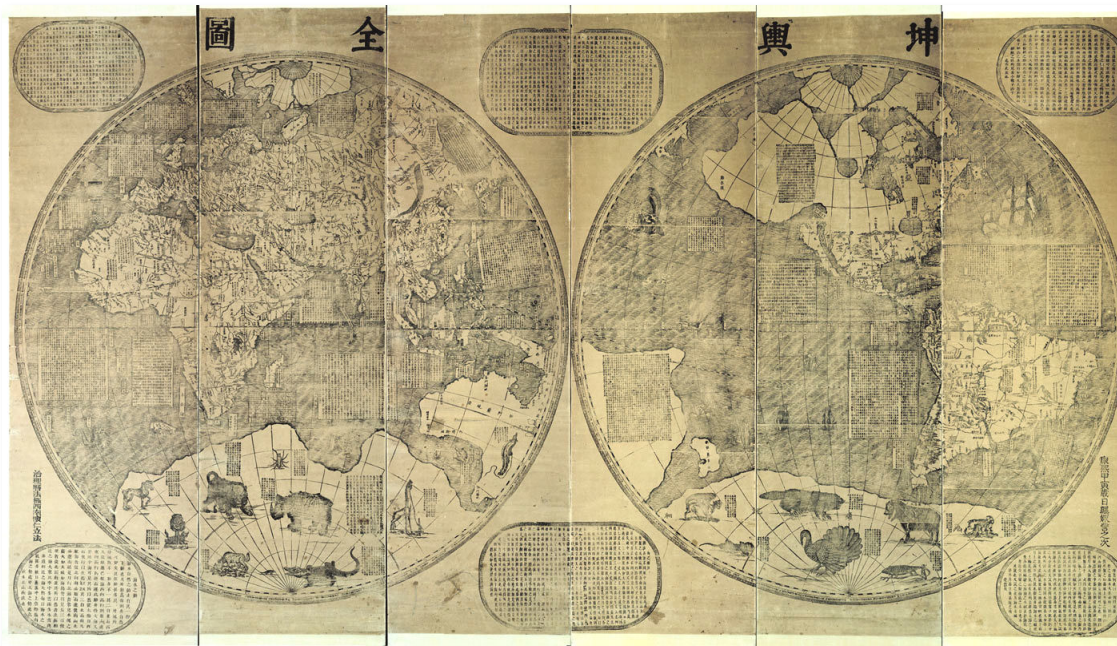
A polar projection by Jean Boisseau, 1640, again disclosing the lack of knowledge on Canada and western North America



*The Evolution of the Arctic Regions on Early Maps*

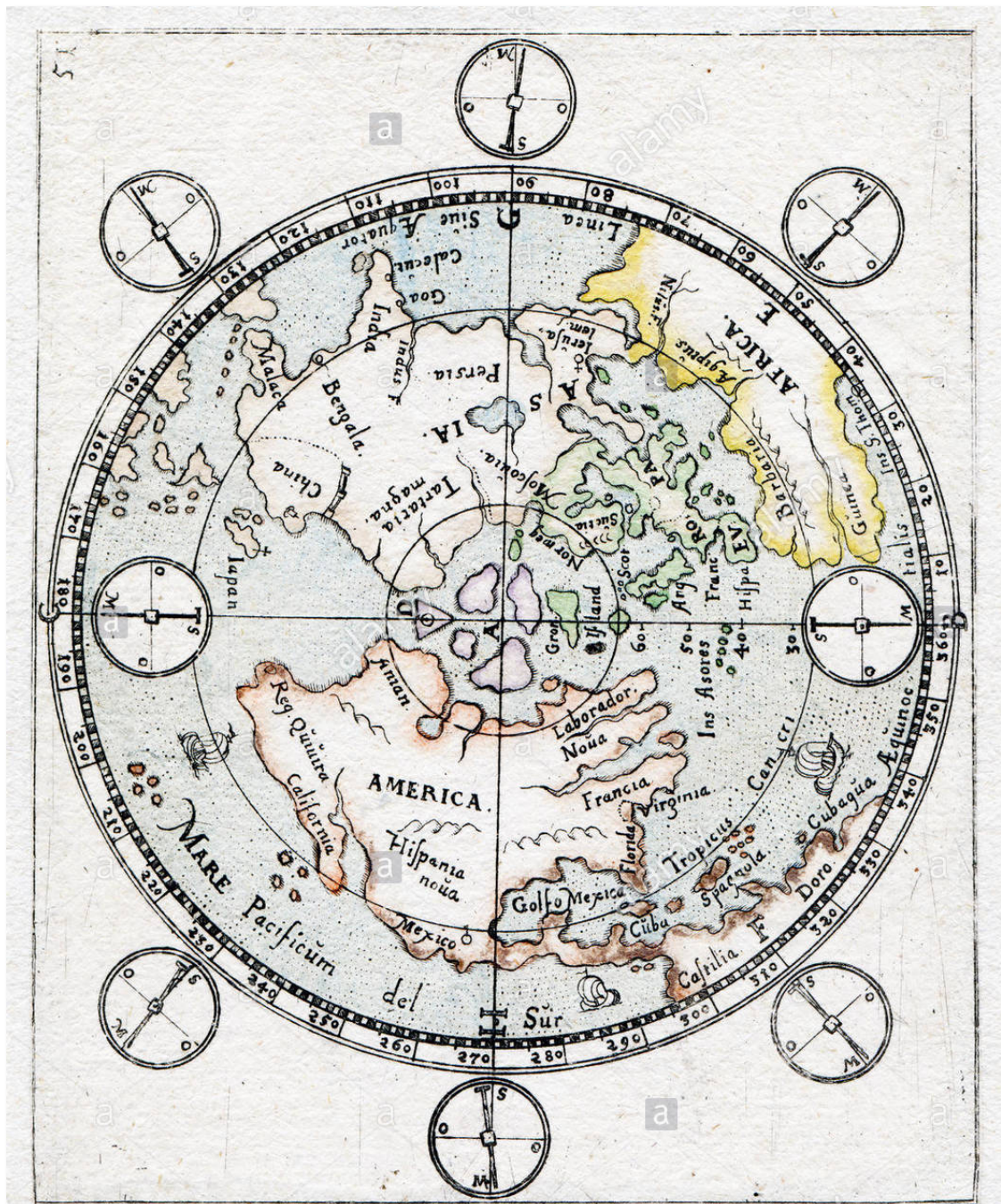


*Chinese world map by Pi Fang Chi, 1648 showing a North Pole configuration of four islands*



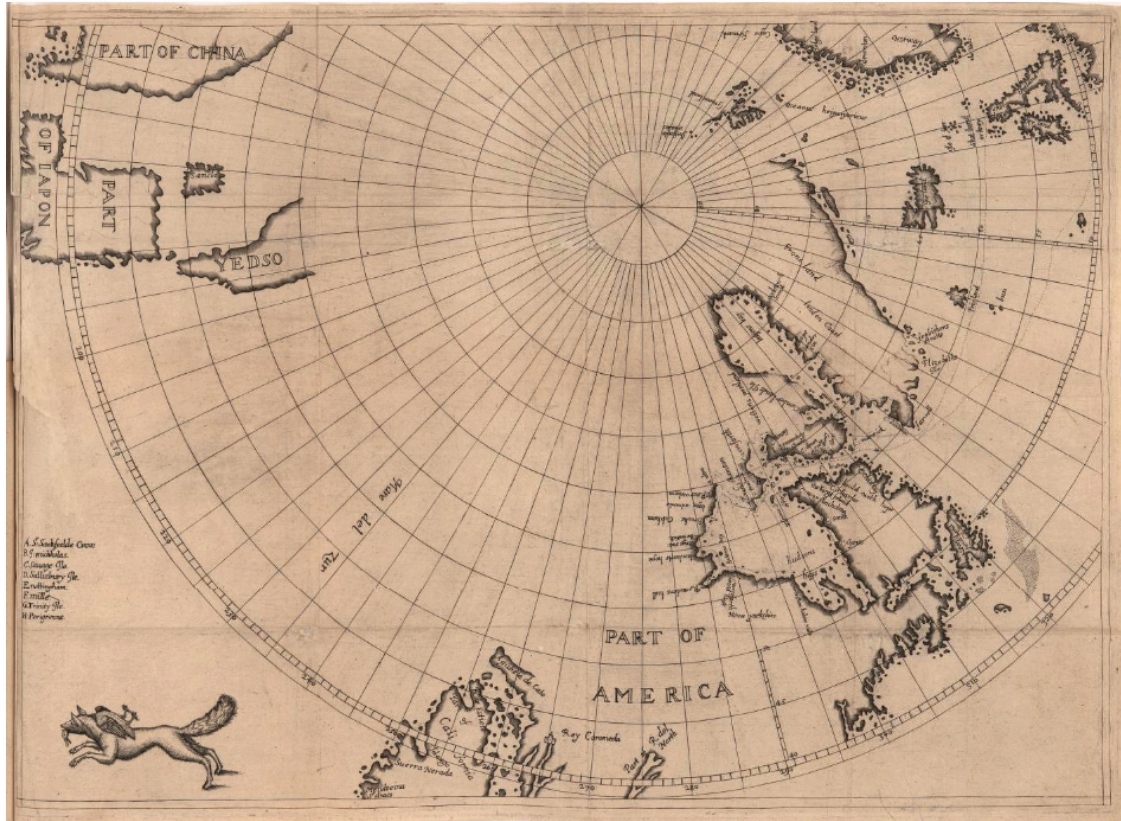
*Kunyu Quantu in two hemispheres, 1674, by Ferdinand Verbiest showing the island configuration for the North Pole (#441)*







*The Evolution of the Arctic Regions on Early Maps*

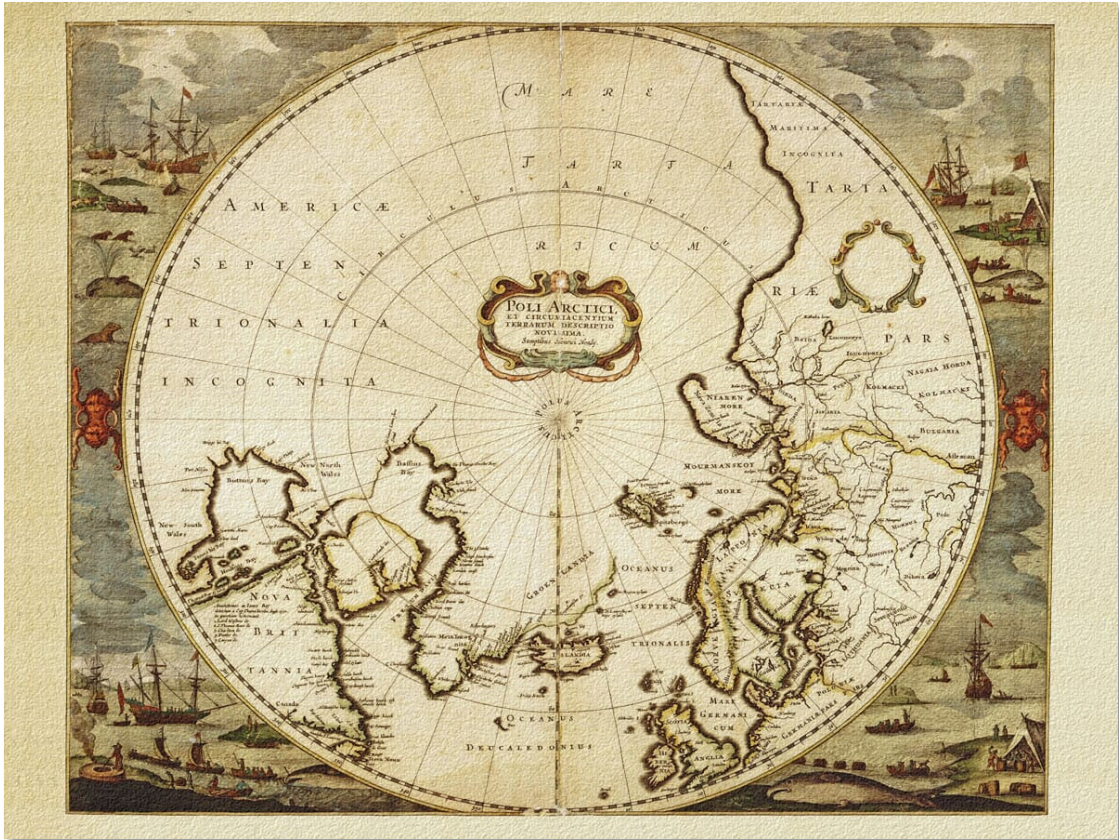


*North polar projection of the world showing part of North America by Luke Fox, 1635  
Part of Greenland, eastern Canada to the Hudson Bay, and part of the Gulf of California are included. California is shown as an island. Cartographic elements include lines of latitude and longitude (on the Ferro meridian), routes of voyages, and sea banks or shoals. Also includes a running fox carrying a goose in its teeth. Items in the image are lettered for identification in key at left.*



This is a circular world map from a 17th-century manuscript, likely a Dutch or English nautical chart. The map is oriented with North at the top. It shows the Americas, Europe, and Africa. The map is titled 'MARE PACIFICVM' and 'MARE ATLANTICVM'. It features a compass rose and a scale of degrees. The map is labeled with various geographical features, including mountains, rivers, and cities. The map is drawn in a circular format, with a central point and concentric circles representing latitude and longitude. The map is labeled with various geographical features, including mountains, rivers, and cities. The map is drawn in a circular format, with a central point and concentric circles representing latitude and longitude.

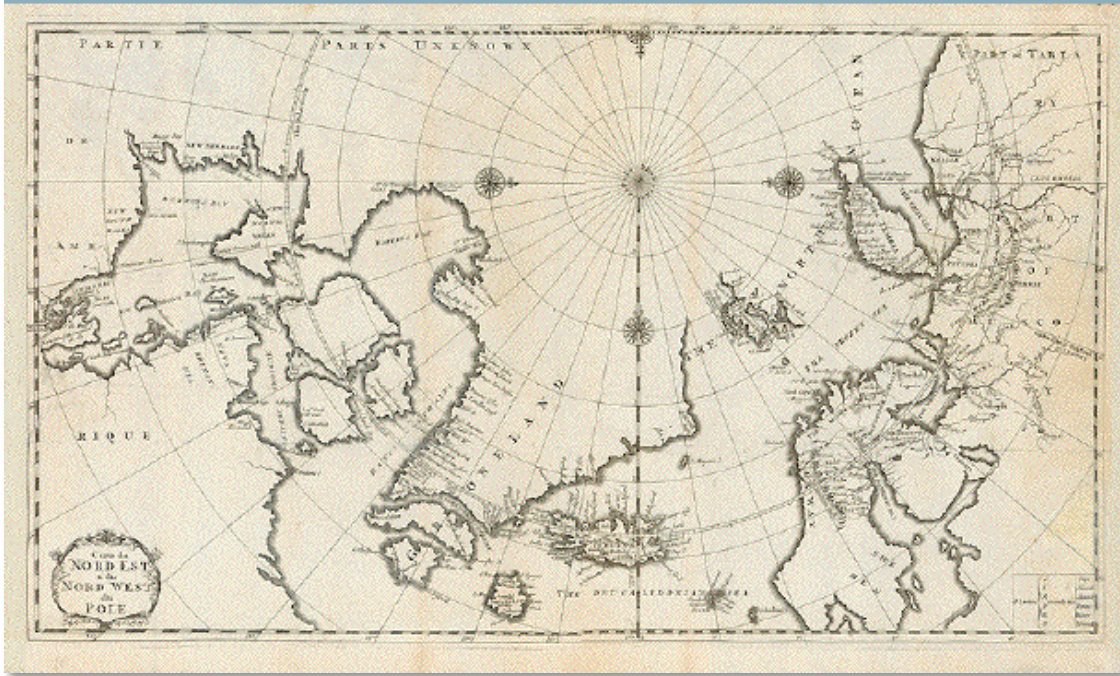
*The Evolution of the Arctic Regions on Early Maps*



*Polus Arcticus, 1636, Jodocus Hondius*

*Like the next maps, demonstrates once again the honesty of the cartographer by leaving blank the areas where there was insufficient evidence. Its depiction of Greenland connected to mainland North America also runs counter to the idea of a Northwest Passage.*





*Carte du Nord Est & du Nord West du Pole"*

*Anonymous copper etching. C a. 1660*

*Shows the North Pole and the northern Hemisphere from Hudson's Bay to the island of Nova Zembla (Novaja Semlja) in Russia. Greenland (Kalaallit Nunaat), Iceland Lapland and Nova Zembla are mapped in more detail, as is the mythical island of Preesland that shows on practically all maps before 1660 south of Greenland.*

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Copper etching by Wilhelm Janszoon Bleau from the atlas edited by Willem Johann Bleau. Amsterdam. ca 1645. The North Pole is the center of this map that shows the coastlines of the countries in the Arctic Circle. The decorative title cartouche is in the upper part of the map with cherubs and personifications of the wind and winter. In the lower right is the map legend surrounded by two Eskimos, a polar bear and foxes. This 1645 map by Willem Blaeu incorporates new information from exploratory expeditions, but its depiction of Greenland connected to mainland North America runs counter to the idea of a Northwest Passage. To the left a dedication to G. Becker de Comeliis with a coat-of-arms.

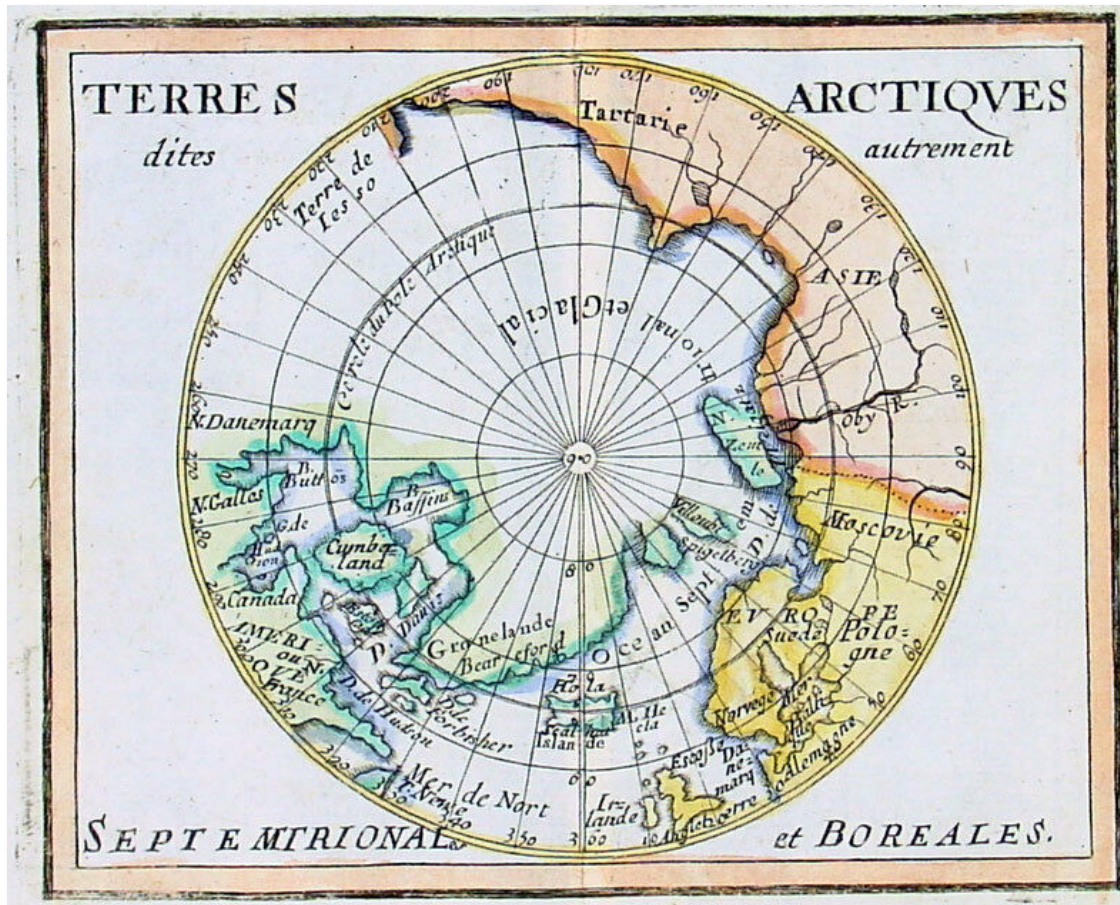


## The Evolution of the Arctic Regions on Early Maps



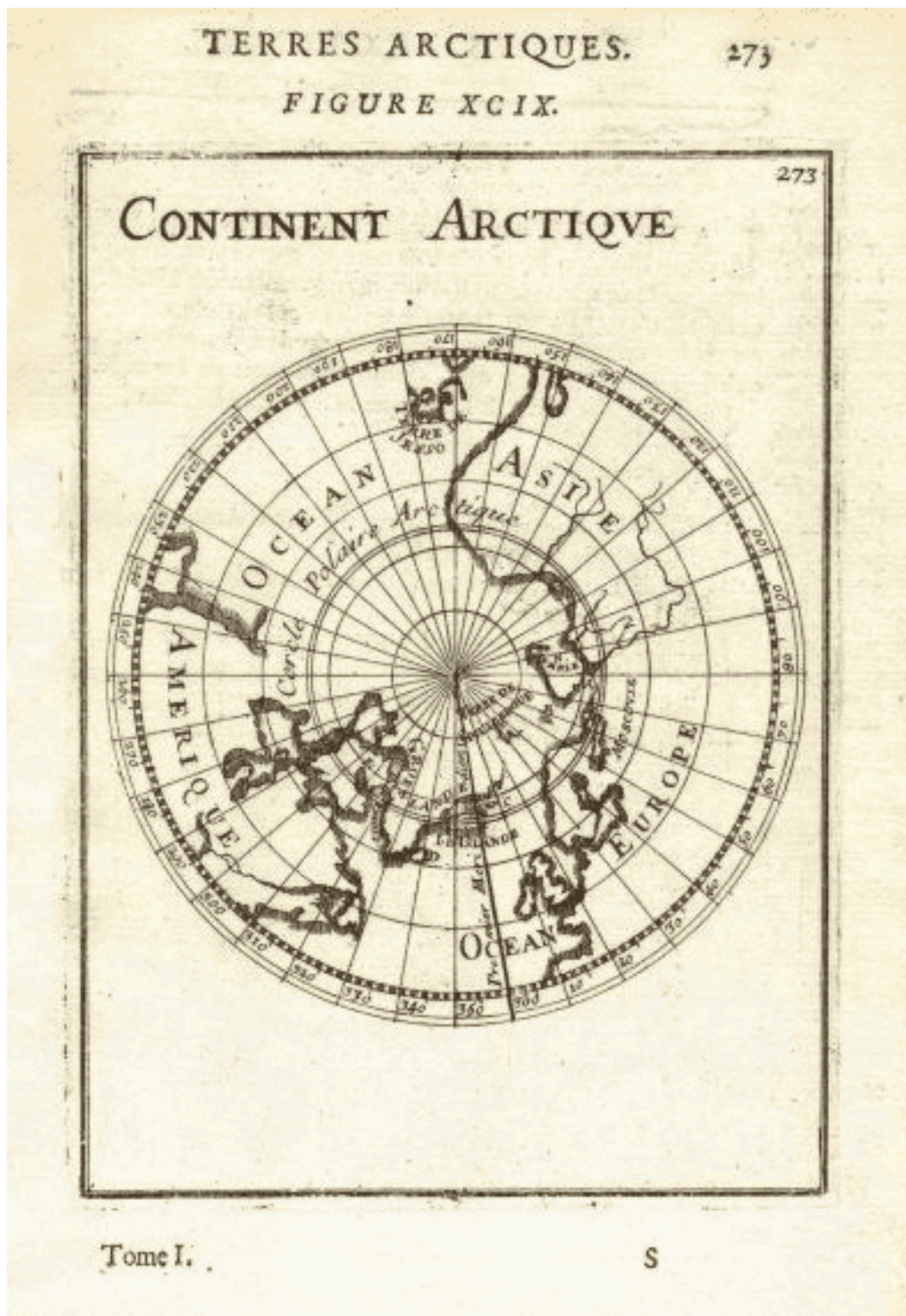
*The North Pole mapped by Moses Pitt in his English Atlas, Volume 1, Number 3, 1680  
Like Bleau's map, its depiction of Greenland connected to mainland North America, again,  
runs counter to the idea of a Northwest Passage.*

*Map of the North Pole and Arctic Circle. Cartographic elements include lines of latitude and longitude. Includes inset of Nova Zembla. At left surrounding cartouche are two scenes, one of Inuits or native Americans with bow, spears, harpoon, kayak, and dwelling; the other a scene of a whale hunt with boats, ship, harpoons, seal or walrus, and puffins or birds. Also includes the English royal coat of arms of Charles II flanked by griffins with a statement of dedication.*



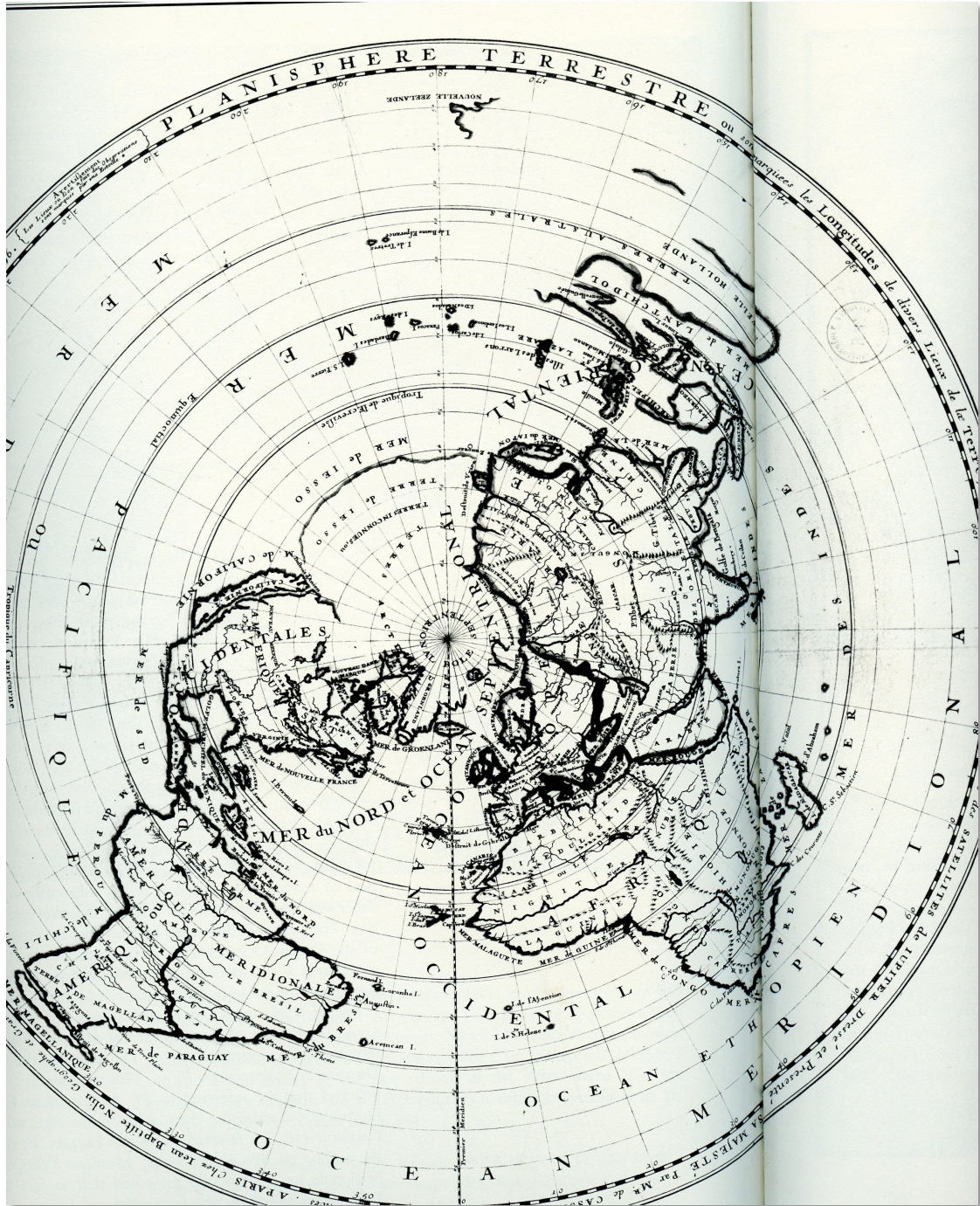
1682 Du Val map of the North Pole North America, Europe, Russia





*Terres Arctiques. Continent Arctique. North Pole, by Allain Manesson Mallet, 1683*





*A world map centered on the North Pole by Jacques Cassini, 1696*

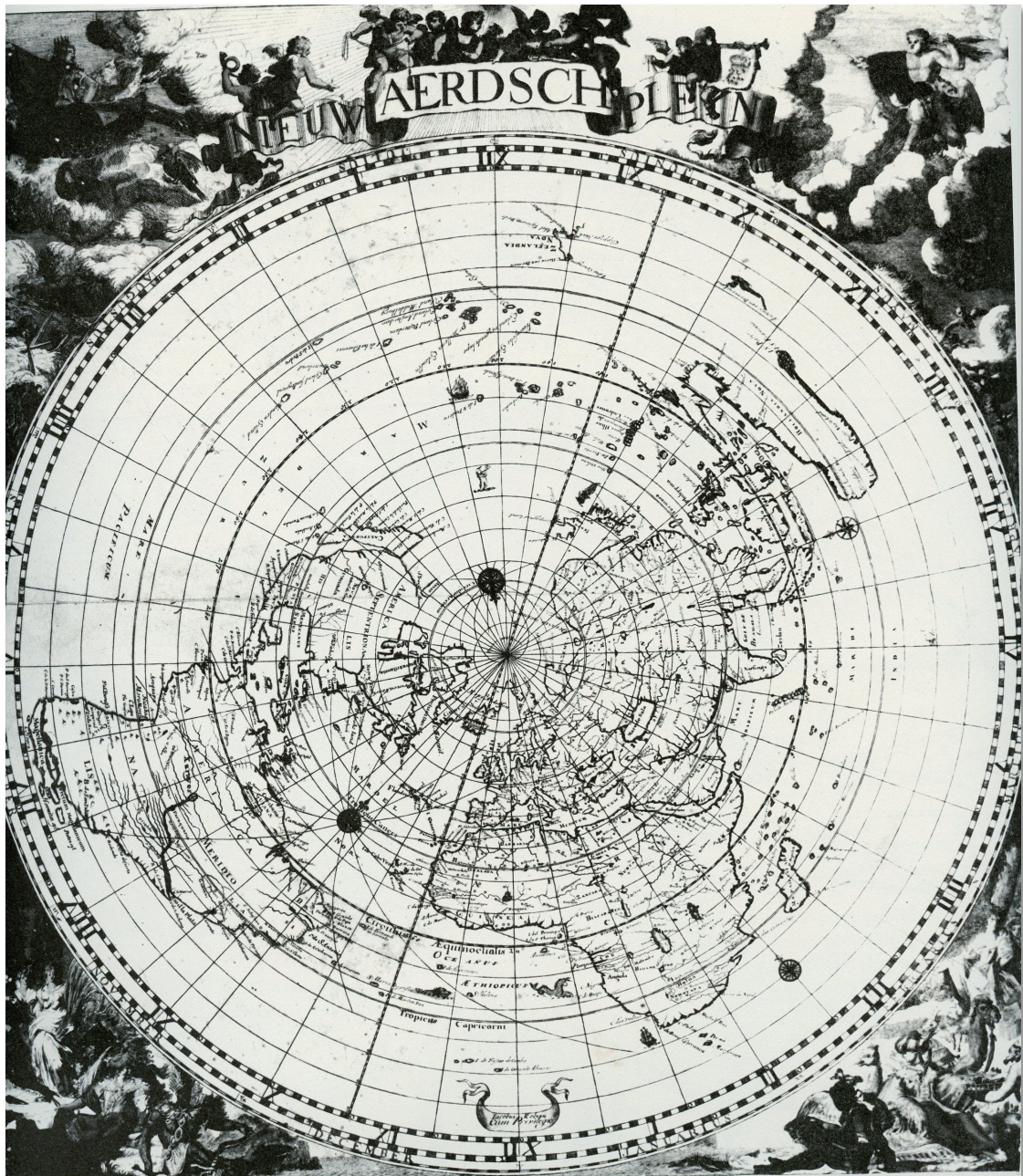
*During the 1670s and 1680s, prolonged scientific observations were being made throughout the world by the French Academy of Sciences under the direction of Jean-Dominique Cassini. Based on sightings of eclipses of the satellites of Jupiter, much more precise determinations of longitude were possible for the first time. Astronomical observations were taken from over forty stations as far apart as Quebec, Santiago, the Cape of Good Hope (assisted by Edmond Halley), Goa and Peking. These findings were translated onto a large circular map of the world eight meters across laid out on the floor of the Paris Observatory. Many distinguished*



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visitors, including James II of England, came to admire the Academy's new plan of the world and it is surprising that no printed version seems to have been promulgated until this present map of 1696 was drawn by Cassini's son Jacques and published by J.B. Nolin.

The Cassini-Nolin map, as its title describes, is based on the Academy's observations; it marks the overseas astronomical stations used by means of a small star. The map is on the equidistant azimuthal projection of Le-Mayerne Turquet and is inherently more accurate than the otherwise larger and grander map by Doncker and Robyn of 1687. The principal difference between the two maps is the revised extent of the Pacific Ocean but in addition the internal details of the Cassini map, such as the marking of the Mississippi, correspond to more up-to-date geographical knowledge available by the mid-1690s.



*A world map centered on the North Pole by Jacob Robyn, 1696*





*Regionum Circum Polarium Lapponiæ Islandiæ Et Groenlandiæ Novae Et Veteris Nova Descriptio Geographica, 1702 by Heinrich Scherer (#492)*

This north polar projection map is a busy, decorative map, full of scenes of hunting, whaling, and a Lapland market. Mythical Frisland and inaccurately placed Frobisher "strait" contrast with a much better defined eastern North America. However, there is not much development here of the Canadian Arctic, for there had been no major expeditions in the area since the 1630s. In fact, cartographers would have to wait till the 1770s for Samuel Hearne's overland journey and James Cook's Pacific voyages before realizing the true extent of territory they still had to fill in. In Asia, though, all Siberian rivers had been discovered and navigated, and the most eastern part of the Asian continent had already been rounded by the Russian Cossack Semen Dezhnev in 1648. Heinrich Scherer, a Jesuit cartographer from Germany, held on to the hope of a Northwest Passage via Hudson's Bay, though there had not been any major expeditions to the Canadian Arctic since the 1630s to provide more detail. His decorative map included the mythical island, Frisland.







*This 1702 Scherer map of the world is presented on a north polar projection and depicts all of the world except the South Pole. California is shown as an island and the track of Magellan's voyage around the world is noted by small sailing ships. There is a distorted portion of Australia noted as Nova Hollandia. On the left is an engraving of the Victoria, the only remaining ship from Magellan's armada. On the right, the few survivors of the voyage are shown, making their way to the Santa María de la Victoria church in Seville, where they go to give thanks for their safe return. The date, of the event (according to the cartouche above the scene, is September 7, 1522; the number of survivors is 18 out of the original 237. Several sea monsters and exotic fish fill the oceans. (#492)*



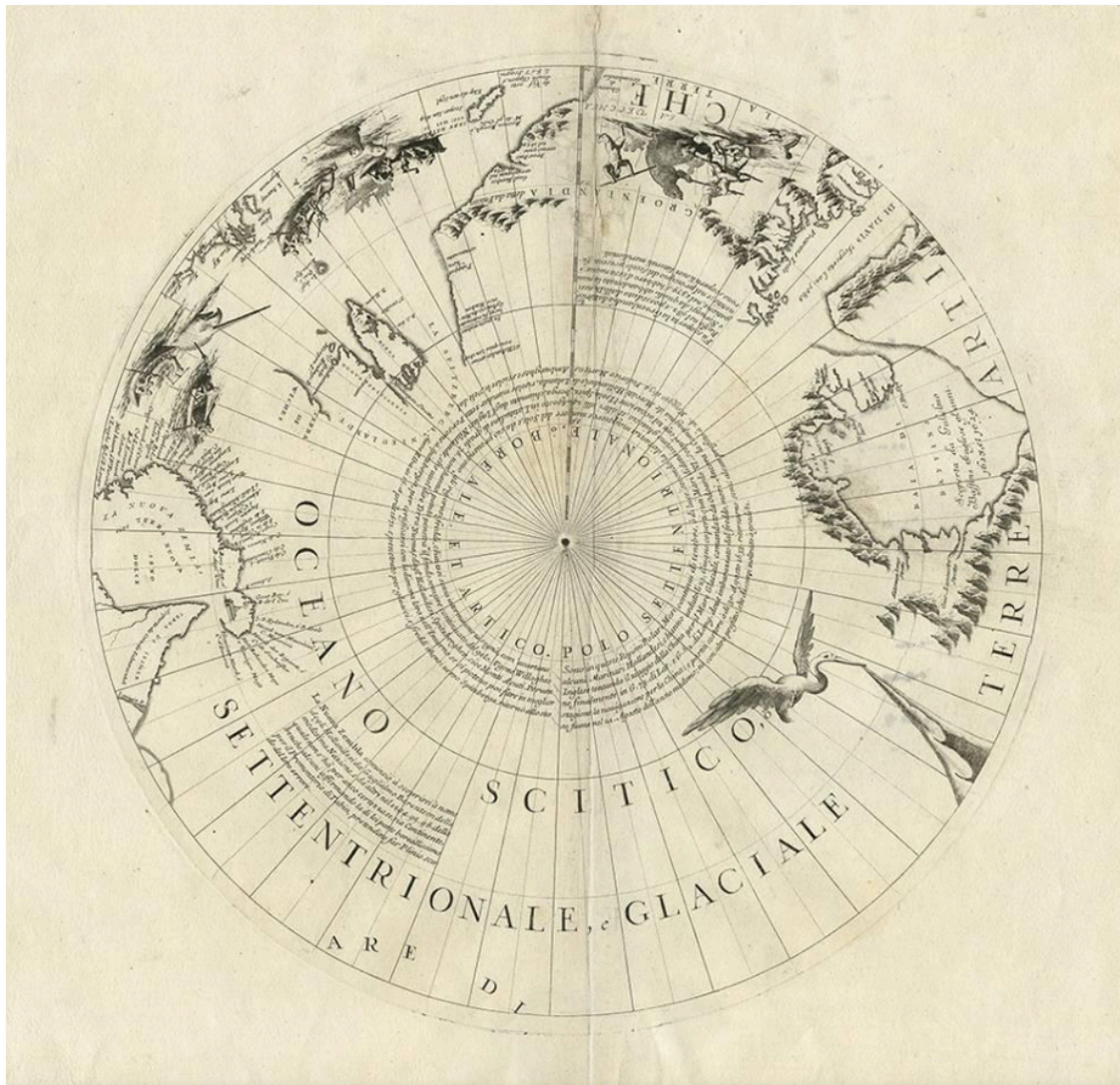
*Unusual world map on a North Polar projection by Heinrich Scherer, with a highly enlarged depiction of Greenland and Iceland and celestial model in the upper right. The map shows California as an Island and a potential Northwest Passage and also a possible continuous landmass to Asia. Interesting early depiction of Nova Hollandia [Australia]*





A 1691 map, *TERRE ARTICHE*, by Vincenzo Maria Coronelli (1650 - 1718) showing the Arctic circle, the northern parts of America, Europe, Russia and Siberia. Only northern half of Iceland is shown. A central circular panel of text is surrounded by a glacial frame. The title cartouche is surrounded by clouds and wind-blowing cherubs. Colored clouds represent the northern lights near the center of this, which, unlike many maps of its time, includes only geographical features that were confirmed by explorers.

Coronelli's map provides a remarkable depiction of the Arctic Circle, North Pole, Greenland, and Baffin Bay, with parts of Canada, parts of northern Europe, Nova Zembla and areas of the northern Tartary. The map is richly annotated with information regarding early discoverers, including Barentsz (1594-1596), Henry Hudson and other 17<sup>th</sup> century explorations. Perhaps most interesting are the annotations relating to Herico Russo (Erik the Red), who discovered Greenland in 982. In the upper left corner is a large title cartouche, elegantly embellished with wind heads. The American place names are given by English explorers, especially Hudson, Baffin and Davis, with Italian translation by Coronelli. The European and Asian Arctic regions are given Dutch names from Barentz, Linschoten and others, with dates of their discoveries. A descriptive text panel is surrounded by an icewall.



*Map of the North Pole by V.M. Coronelli, circa 1692*



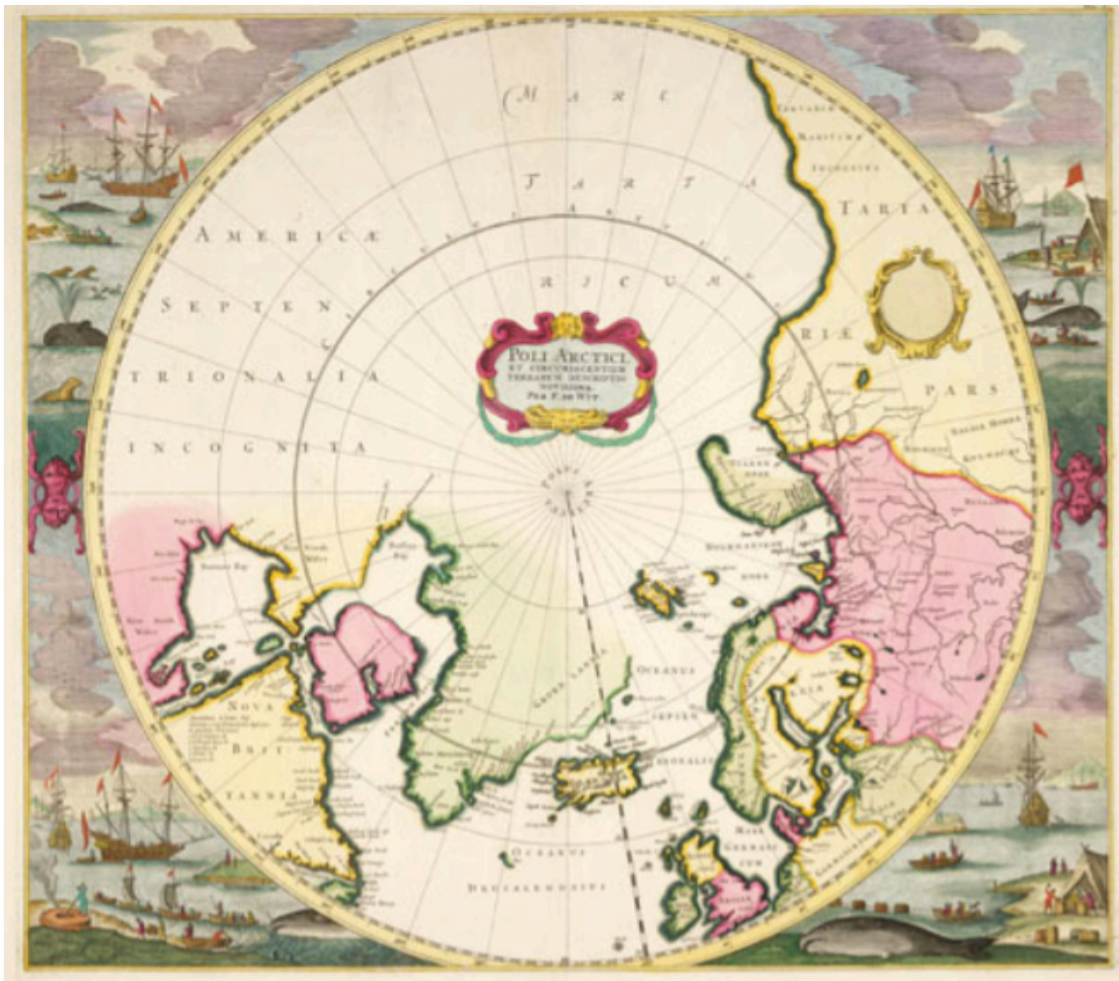
*The Evolution of the Arctic Regions on Early Maps*



*Planisphaerium terrestre secundum recentiores astronomorum observationes*

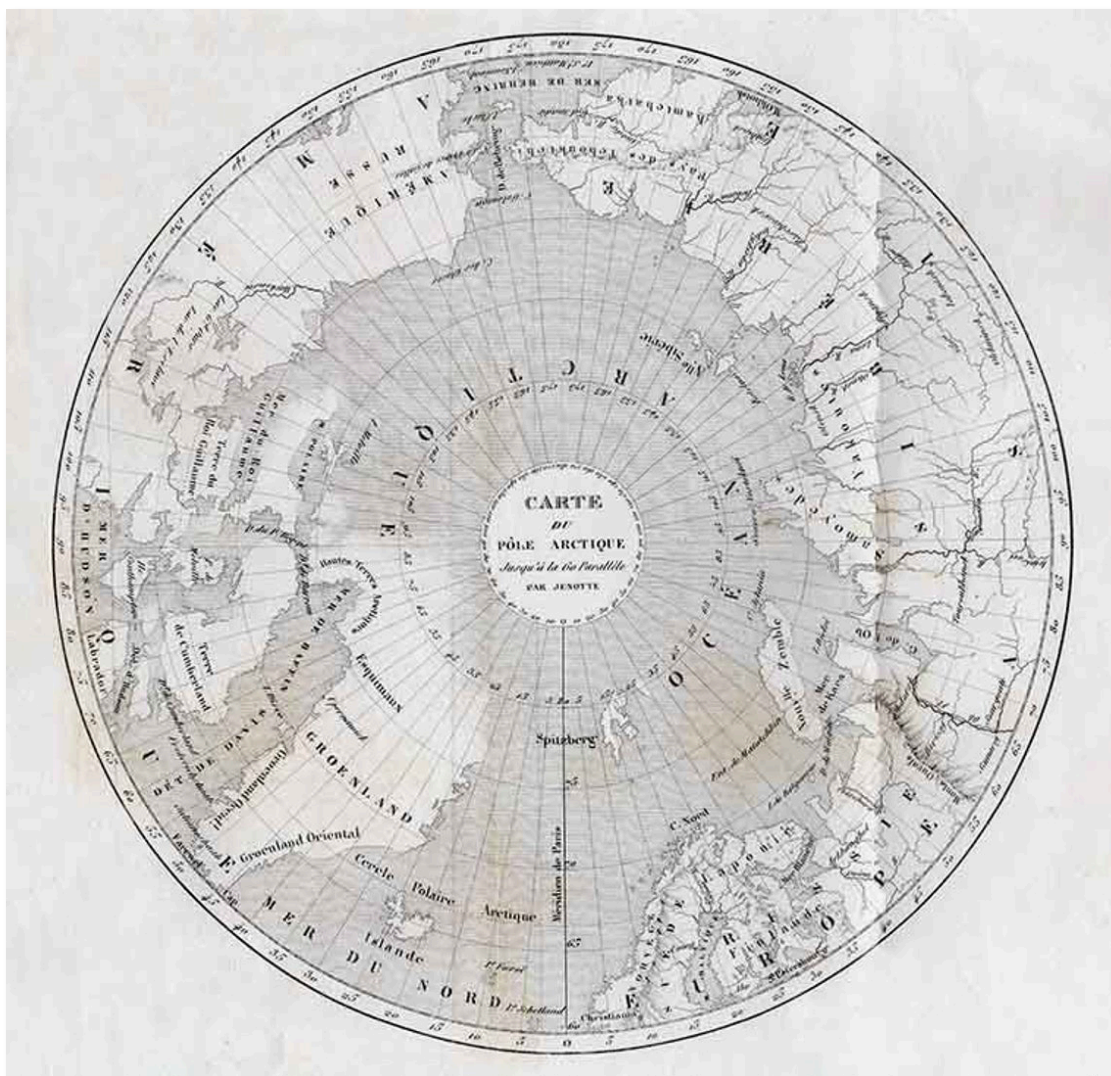
*This 1713 map by Jean-Dominique Cassini was the most scientific map of the world in its day. It draws on the observations and measurements of many explorers and depicts two possible routes for a Northwest Passage.*

*The Evolution of the Arctic Regions on Early Maps*



*Poli Arctici, et circumiacentium terrarum descriptio novissima*  
Large areas remain blank in this 1715 map by Dutch cartographer Frederick de Wit, which is decorated with scenes from the whaling industry. Image: Library and Archives Canada.



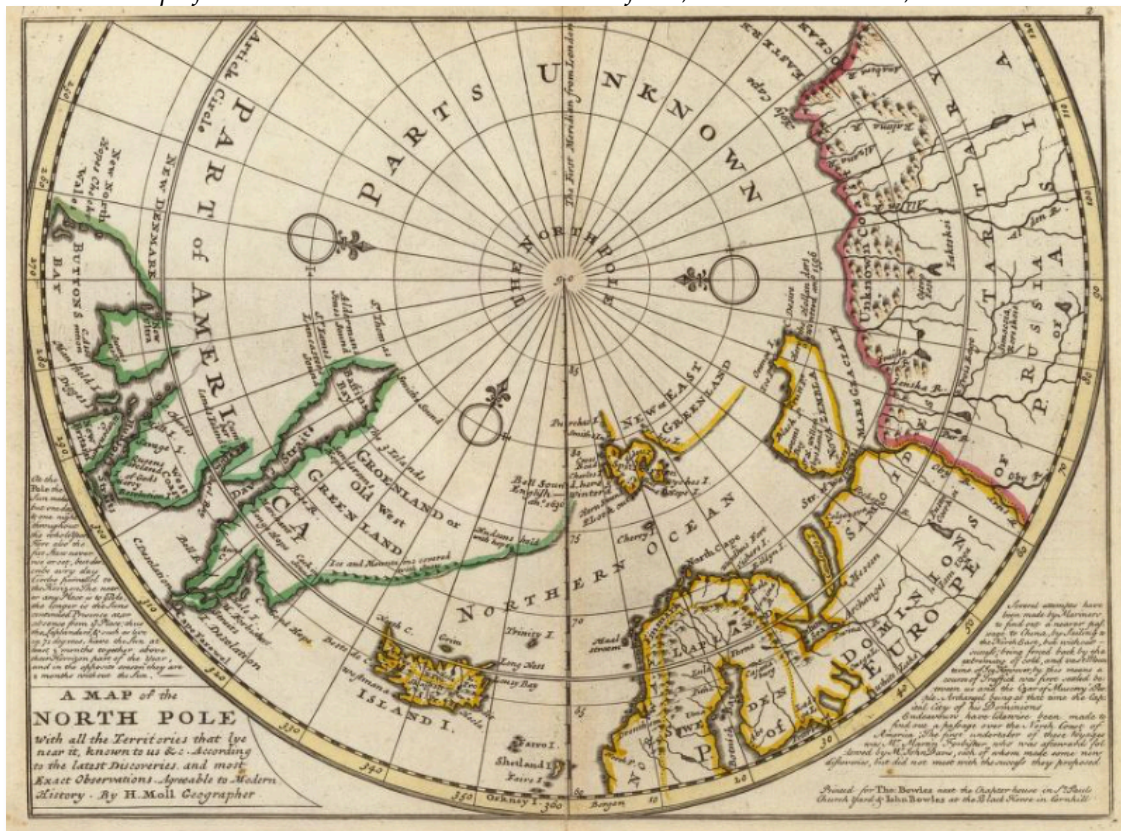


1718 map of the North Pole, indicating, like all the previous examples, that Greenland was still not known to be an island and perceived to possibly be part of the mainland of North America (see the separate monograph on the Evolution of Greenland on Early Maps)

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Map of the Arctic Circle down to latitude of 50°, Pieter van der Aa, 1720



North Pole, 1732 by Herman Moll

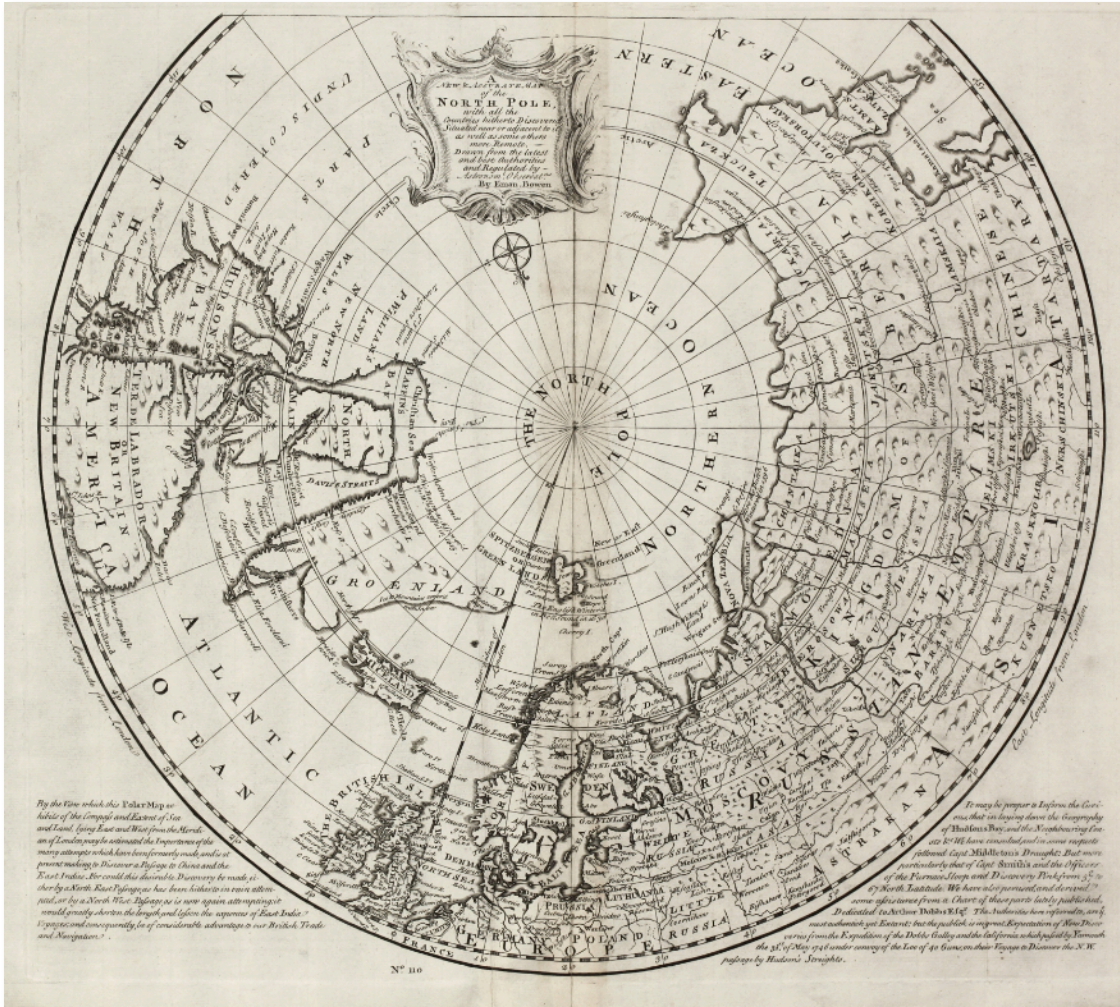
A map of the North Pole with all the territories that lye near it, known to us &c. According to the latest discoveries, and most exact observations. Agreeable to modern history. By H. Moll Geographer. Printed for Tho: Bowles next ye Chapter House in St. Pauls Church Yard, & John Bowles at the Black Horse in Cornhill, London





*Nouva Carta del Polo Artico by Guillaume de L'Isle, Venice, Girolamo Albrizzi, 1740*  
A map of the Northern Hemisphere from 'Atlante Novissimo che Contiene Tutte le Parti del Mondo'. From the North Pole down to 45°... Map of the North Pole from a Venetian edition of an atlas by the great 18<sup>th</sup> century French geographer Guillaume De L'Isle. From *Atlante Novissimo che Contiene Tutte le Parti del Mondo*. North American place names include Boston, N. York, C. Cod, Chesapeak S., Mariland, Virginia, Florida, Nuova Messico, Santa Fe, Illinois, Kikapou, Missouri F., Missisipi F., California, S. Barbara F., P. S. Francis, and many more in Canada. California is depicted as an island. The northwest area of North America is left vaguely incomplete in acknowledgement of the lack of absolute knowledge of that region.

## *The Evolution of the Arctic Regions on Early Maps*



*A New & Accurate Map of the North Pole, with all the Countries Hitherto Discovered...*

*Emanuel Bowen, 1747*

Arctic and sub-Arctic map of Emanuel Bowen from 'A Complete System of Geography'.  
Excellent detailed around Hudson Bay, Greenland, Spitsbergen, the northeast coast of Europe.  
Asia and the Northeast passage. With a decorative cartouche and explanation text.



*The Evolution of the Arctic Regions on Early Maps*



*Map of the Northern Hemisphere and North Pole by Tirion, circa 1754*



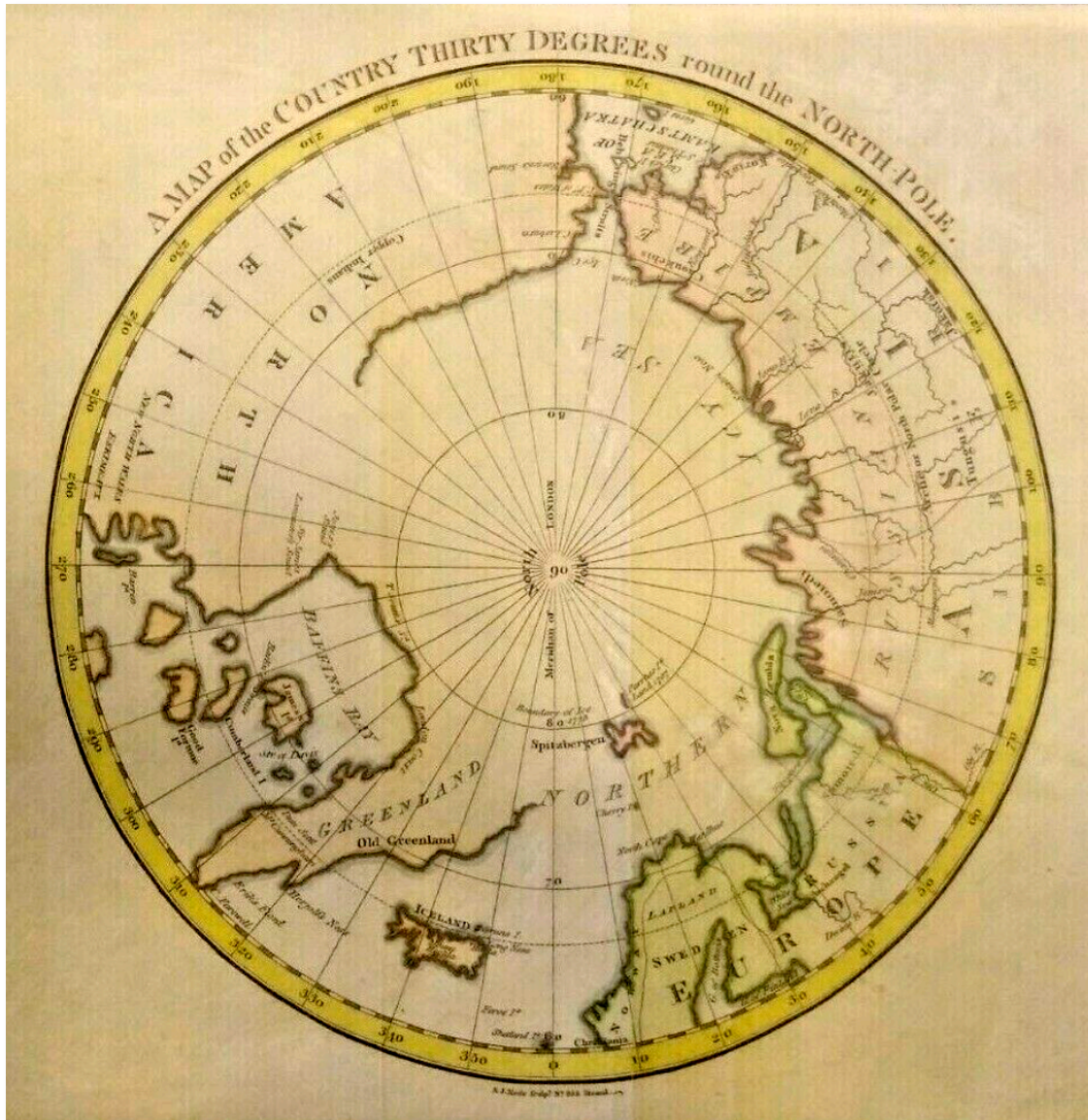
*A Map of the Icy Sea in which the several Communications with the Land Waters and other new Discoveries are exhibited. 1760*

A map by John Gibson of the North Polar region that appeared in the *London Gentleman's Magazine*. Highlighting the latest discoveries by several nations as well as a host of speculations, it provides insight into the extent and limits of geographical knowledge at the time. This map is based on the work of the French geographers Phillipe Buache and Jean Palairret, for whom Gibson had engraved other maps. It posits a polar Northwest Passage from Portugal to Japan running north of Greenland, a land bridge between Greenland and Alaska (a 'peninsula discovered 1753'), and an apocryphal Sea of the West in western North America. It is notable for providing an up-to-date combination of geographic knowledge from Russian, English, French, and other expeditions. The location of the great Dutch whaling center of Spitzbergen and of 'a Dutch ship in 1670' are noted, hinting at the early history of north polar exploration. Numerous maps of North America and the Arctic issued in the mid to late 19<sup>th</sup> century feature a massive speculative inland sea in the American Pacific Northwest referred to as the Sea of the West (*Mer l'Ouest*). The earliest printed map to feature the sea was Jean-Baptiste Nolin's 1742 *L'Amerique ou le Nouveau Continent*, Nolin likely copied the relevant cartography from an unpublished manuscript discovered in Guillaume De l'Isle (1675 - 1726) posthumous papers - although it seems likely that he either did not see the De l'Isle manuscript clearly Or only heard about it, as his cartography is substantively different



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from that proposed by De l'Isle. The notion nonetheless achieved vigorous support in intellectual circles, as it made the idea of an inland naval passage through North America seem more practical. In 1752, it was embraced by Jacques Nicholas De l'Isle, Guillaume's younger brother, and Philip Buache, who boldly presented the sea in conjunction with the high-integrity discoveries of Vitus Bering's Great Northern Expedition (1733 - 1743) in the Siberian Arctic. Although De l'Isle and Buache were immediately attacked Over the sea of the west by other intellectuals, the Sea of the West appeared on many maps until generally disproved by the expeditions of Cook, Vancouver, and La Perouse.



Map from the top of the North Pole in 1786 by S.J. Neele. It shows Baffin Bay, the Northern Icy Sea, and the North Pole dead center. Also the map shows rivers, ports, bays and more as well as light topographical details. The map is finished off with a large title cartouche.

Early explorers also occasionally played fast and loose with the facts. The Englishman Martin Frobisher made three voyages in search of the Northwest Passage in the late 1500s. He didn't find it. "He discovered some straits, pretended to find a



lot more". On one trip, he returned to England with tons of what he claimed was gold-containing ore. It was enough to convince his backers to fund another trip, but it ultimately turned out to be pyrite—fool's gold.

With time, and additional exploration, the maps got better. The map, shown below, published in Russia in 1784, was the first to show details gleaned from a large and highly organized survey of the Arctic coast of Siberia. It depicts a possible Northwest Passage: On the far right side, *R. de l'Quest* connects Hudson Bay to the Pacific Ocean. Notice the level of detail on the Asian side of the Pacific compared to the North American side—the situation is reversed in a map published the same year based on Captain James Cook's exploration of the coast of Alaska (see slide nine in the gallery above).

This map, published in Russia in 1784, depicts a possible Northwest Passage: on the far right side, *R. de l'Quest* connects Hudson Bay to the Pacific Ocean.



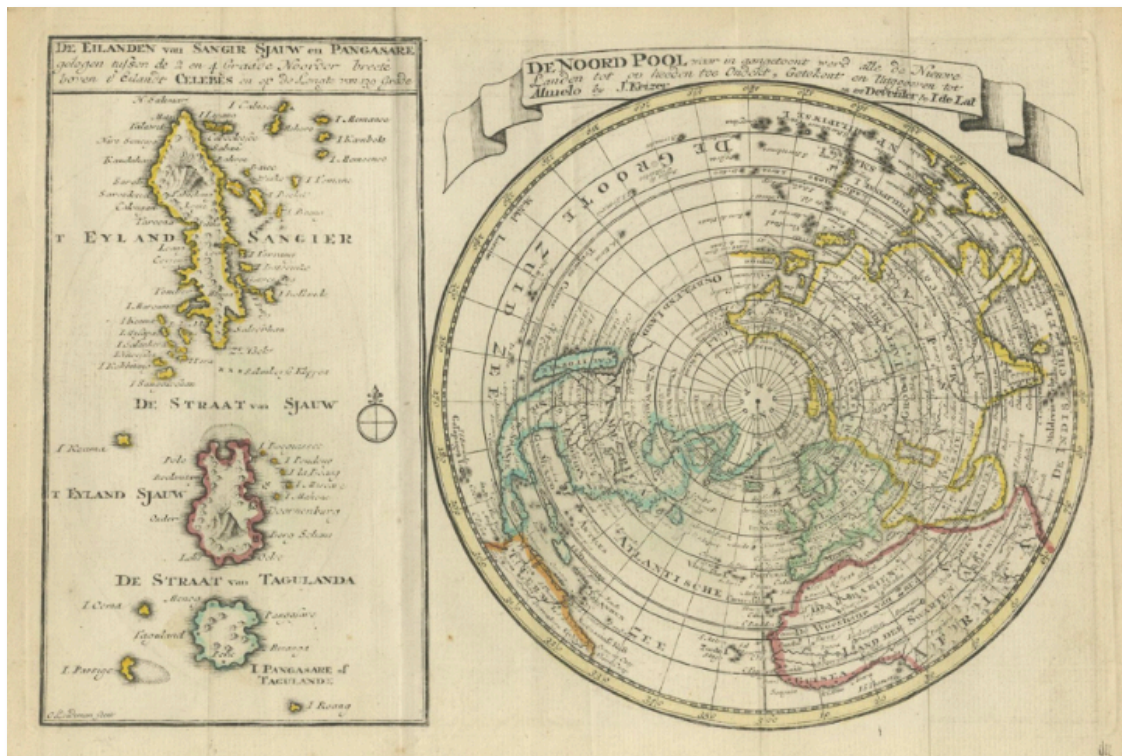
*This map, published in Russia in 1784, depicts a possible Northwest Passage: on the far right side, "R. de l'Quest" connects Hudson Bay to the Pacific Ocean*

As temperatures began to climb toward the end of the 19<sup>th</sup> century, the long-sought Northwest Passage finally opened up. The Norwegian explorer Roald Amundsen completed the first journey entirely by boat through the Northwest Passage in 1906. It took three years and two winters on the ice.

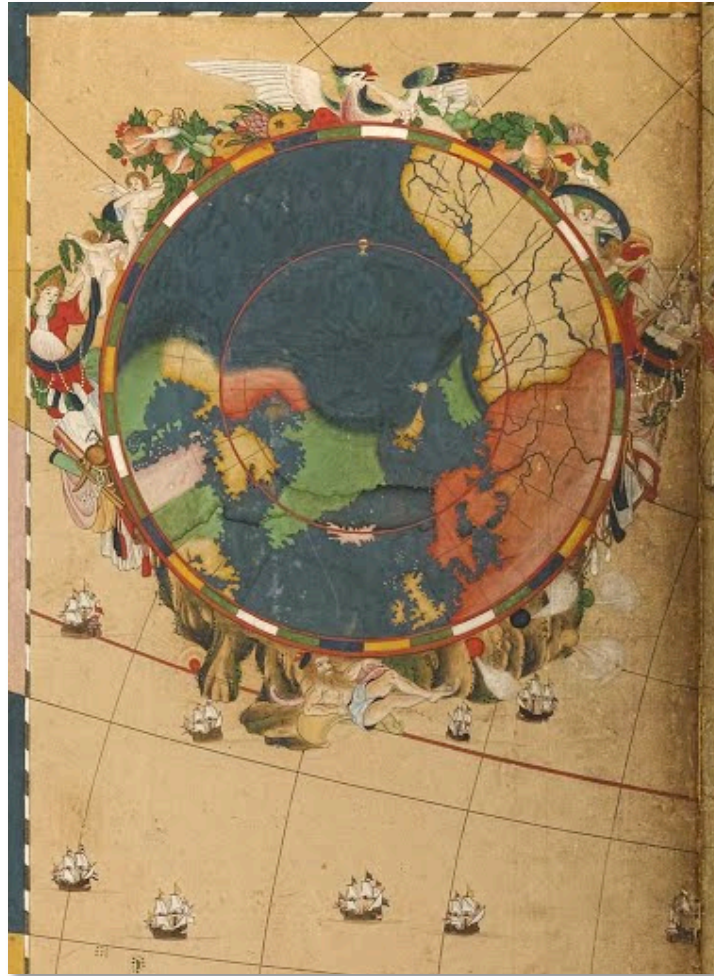
More recently, it's been getting easier. As polar ice has melted, the route has become more accessible. In 2016 a cruise ship carrying 1,700 people became the first passenger liner to complete the passage. The melting of Arctic sea ice has raised the



possibility of new trade routes and energy production, as well as the potential for territorial conflicts and environmental damage to a relatively untouched part of the Earth. For better or worse, a new chapter in the storied history of the Arctic is just beginning.



*North Pole & Sangihe Archipelago by Keizer & de Lat, 1788*



*North Pole of a Japanese world map Continental Map with Scenes of Forty-Eight Foreign People (America & Europe), late 18<sup>th</sup> century, manuscript (a pair of six-fold screens), Kobe City Museum*





*A Map of the Countries Thirty Degrees Round the North Pole.  
Samuel John Neele, London, 1796, 35 x 35cm*

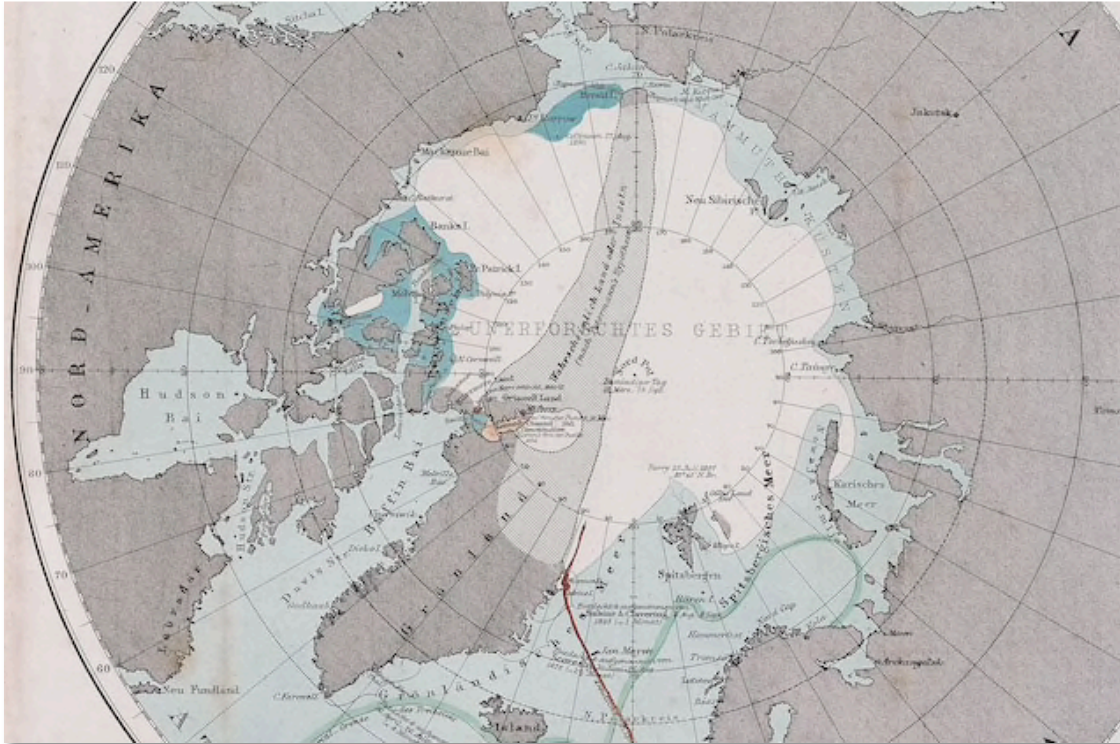
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*North Pole map by Fullarton, 1856*



## *The Evolution of the Arctic Regions on Early Maps*



*Published in 1868, this German map portrays a (nonexistent) land bridge stretching across the Arctic from Greenland. The red line coming up from the bottom is the mapmaker's suggested route for an expedition.*

*The Evolution of the Arctic Regions on Early Maps*



*North Pole, Stieler, 1885*



